



Northeastern University

Undergraduate Catalog 2018-2019

Full-Time Day Programs

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Full-Time Day Programs

Admission

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Admission Policy and Entrance Requirements

Admission to Northeastern is highly selective. The complexity of the admission process is not one that can be defined through a formula. At Northeastern, we evaluate all applicants holistically in order to identify candidates who will bring a diverse set of experiences and interests to our community. Each year, approximately 2,800 new freshmen and 400 new transfer students enroll in September. In addition, over 900 new students will enroll in January through participation in The N.U.*in* Program. The N.U.*in* Program is an innovative first-year global experience during which admitted students begin their college studies at one of our partner institutions overseas while earning transfer credits in the fall semester¹ and transitioning to the Boston campus in the spring semester. See additional information about The N.U.*in* Program.

In building a diverse and talented incoming class, the Admissions Committee seeks to enroll students who have been academically successful and who have been actively involved in their school and community.

When considering applicants for freshman admission, the committee considers whether the applicant's high school transcript reflects the various academic opportunities offered such as honors, advanced placement, international baccalaureate, or college-level courses. Typically, students admitted to Northeastern have been extremely successful with a challenging course load.

When reviewing transfer students, the committee considers the candidate's college and high school transcripts, letters of recommendation, resumé, essay, academic preparation for major of choice, and contributions to the community. In certain cases, standardized test scores are required. Transfer applicants are encouraged to submit all supporting materials by the application deadline.

Northeastern accepts both the Common Application and the Coalition Application. Students may apply online via the Common Application or the Coalition Application. Northeastern does not have a preference for which application is submitted. Both the Common Application and the Coalition Application will be reviewed equally.

The committee will begin to evaluate an applicant's candidacy for admission when all application credentials have been received. Students are informed of their application information through the Application Status Check. Students are highly encouraged to verify that identification information (name, date of birth, and NU ID) is on every item submitted to ensure timely and accurate processing.

¹ Throughout this catalog, the word semester refers both to full semesters and to half semesters, except in cases where there is a cost or timeline difference. In such cases, the terms "full semester" and "half semester" are used.

Deadlines and Decisions

Northeastern offers the following application options.

Freshman Applicants:

- Early Decision I (binding enrollment for fall admission)
- Early Action (nonbinding)
- Early Decision II (binding enrollment for fall admission)
- Regular Decision (nonbinding)

Transfer Applicants:

- Application for fall start (apply in spring)
- Application for spring start (apply in fall)
- All transfer application options are dependent on space availability

Required Materials

The committee will begin to evaluate an applicant's candidacy for admission when all application credentials have been received. Students are informed of their application information through the Application Status Check. Students are highly encouraged to verify that identification information (name, date of birth, and NU ID) is on every item submitted to ensure timely and accurate processing.

FRESHMAN APPLICANTS

More than 62,000 students apply for a space in the freshman class. The committee has the responsibility of selecting applicants for admission who it believes will contribute to Northeastern's diverse and vibrant academic and social community. The committee is particularly interested in applicants who have challenged themselves academically; are highly motivated; have a strong work ethic; and who have demonstrated qualities of leadership, creativity, diversity, engagement, global perspective, adaptability, and resiliency. Our students exhibit a commitment to involvement and to being a positive influence in their community and in the world. We encourage applicants to spend time to thoughtfully prepare their application in order to make sure their strengths and qualities resonate with the Admissions Committee.

Freshman applicants must submit the following:

- Completed Common Application or Coalition Application.
- Application fee of \$75.
- Secondary school counselor and teacher recommendations.
- Secondary school transcripts with final junior-year grades. First-semester or first-trimester grades should be submitted when they are available; first-quarter grades are not required.
- Early Decision Agreement for students applying under the binding Early Decision I or II application options.
- Official SAT or ACT results. Northeastern's CEEB college code is 3667/ACT college code is 1880. Test scores must be sent to Northeastern directly from the testing agency.
- Portfolios are required for Studio Art and are highly encouraged for majors within the College of Arts, Media and Design. Beginning in spring 2018, a portfolio is no longer required for music technology applicants. Northeastern uses SlideRoom for online portfolio submissions. See additional information (p. 14).

- General Equivalency Diploma (GED) recipients should provide their official GED score reports and their most complete high school transcript.
- Home-schooled applicants should submit an academic portfolio/transcript consistent with their state guidelines. This should include grades for each course. They must also provide proof that they will have met by the end of May of the year of graduation all requirements for an official high school diploma and submit a GED, or a certificate of completion from their local school district or state board of education, by the end of July of the year of matriculation. In addition to all other first-year requirements, home-schooled students must submit Northeastern's home-school supplement, which requires students to detail the rigor of their course work.
- Early high school graduates: Northeastern will review applications from students who will complete high school in three years or less. Before enrolling at the university, all applicants for early admission must have completed all units required for high school graduation (including four years of English) or must have earned the GED. In addition to the required materials for freshman applicants, early high school graduate applicants must provide statements of support from the school principal or guidance counselor and the student's parents. The endorsements should speak directly to the applicant's academic readiness and emotional maturity for college.
- Nontraditional grading policies: Students who attend schools where narrative evaluations are used instead of traditional letter grades are required to submit the narratives to complete their applications.
- English proficiency: Northeastern seeks to enroll the most talented and academically qualified students. All Northeastern courses are instructed in English, and therefore attention is paid in application review to preparedness for success in an English-language environment. There may be additional requirements for applicants whose first language is not English. Please see the admissions website (<https://www.northeastern.edu/admissions/application-information>) for the most up-to-date information.
- For applicants applying from secondary schools located outside the United States, SAT or ACT scores are not required and will not be considered for admission if submitted. Applicants are encouraged to submit results from nationally accredited exams that signify completion of secondary education and are required for entry into universities in their home country. Applicants who attend a high school in the United States are required to submit their official SAT or ACT results.

TRANSFER APPLICANTS

Each year we receive over 4,000 applications for transfer admission. Our most competitive candidates for transfer admission typically have a grade-point average of 3.500 or higher.

Transfer applicants must submit the following:

- Completed Common Application or Coalition Application.
- Application fee of \$75.
- Official college transcript(s) for all institutions you have attended.
- College Report to be completed by the registrar's office or dean of your current/previous school.
- Academic evaluation from an academic advisor, professor, or employer.
- Final high school transcript or GED.
- SAT/ACT scores for students who have completed fewer than 24 college credits (after high school graduation) at the time of the application deadline. *This is not required for students who have been out of high school for more than five years. Standardized test scores are*

not required for students who did not complete high school in the United States.

- Joint Service Transcript (if you are a veteran).
- English proficiency: Northeastern seeks to enroll the most talented and academically qualified students. All Northeastern courses are instructed in English, and therefore attention is paid in application review to preparedness for success in an English-language environment. There may be additional requirements for applicants whose first language is not English. Please see the admissions website (<https://www.northeastern.edu/admissions/application-information>) for the most up-to-date information.
- Portfolios are required for Studio Art and are highly encouraged for majors within the College of Arts, Media and Design. Northeastern uses SlideRoom (<http://www.northeastern.edu/admissions/application-information>) for online portfolio submissions. See additional information (p. 14).

TRANSFER CREDIT

Students may transfer up to 60 semester hours of credit from a two-year college, or up to 80 semester hours from a four-year college, or a combination of the two types of colleges. If you have been admitted to the D'Amore-McKim School of Business and your college or university is not AACSB-accredited, the maximum number of credits that you can transfer to Northeastern is 60. See also "Residency Requirement (p. 32)."

College courses completed with a grade of C or better are considered for transfer credit by faculty evaluators. Liberal arts course work taken more than 10 years ago and math and science course work completed more than 5 years ago cannot be considered.

All transfer-credit documents should be received prior to matriculation and *must* be received within one semester of matriculation. These documents include, but are not limited to, Advanced Placement, International Baccalaureate, and National Education exam scores and official transcripts from colleges and universities. These documents should be submitted whether or not you wish to receive transfer credit from this work. Transfer credit *will not* be granted for work completed prior to matriculation if the official credential is received after the completion of the first semester. College course work completed at an international institution must be translated into English and evaluated by a recognized credential agency.

ADVANCED EXAMINATIONS

Students may apply up to 32 semester hours of advanced credit toward their undergraduate degrees. You may enter the university with advanced credit on the basis of your test scores on certain specific examinations (listed below) or on successful completion of accredited college-level courses that you took before you enrolled at Northeastern. For consideration, students should submit transcripts or test results before matriculation and must submit official score reports for credit.

Northeastern currently awards advanced credit for the following examinations:

- Advanced Placement
- British GCE A-Level Examination
- German Abitur
- French Baccalaureate
- International Baccalaureate
- Swiss Federal Maturita Diploma

Advanced Placement Evaluations

The university awards credit for test scores of 4 and 5. Visit the Transfer Equivalency Database (<https://ugadmissions.northeastern.edu/transfercredit/TransferCreditevaluatedstudent2.asp>) for an up-to-date AP listing.

Credit awarded: 4–10 semester hours or up to two courses per exam (refer to AP listing).

British GCE A-Level Examination

The university awards credit for A-level courses with final exam grades of C or better.

German Abitur

The university awards credit for intensive subjects with scores of 7 or higher on a 15-point scale and 4 or higher on a 6-point scale only for subjects that required a written exam.

French Baccalaureate

The university awards credit for any series A–E on the Baccalaureate de l'Enseignement du Second Degré with a coefficient of 4 or above and a score of 10 or better on a 20-point scale.

International Baccalaureate

The university generally awards credit for exam scores of 5, 6, or 7 in higher-level courses only. Visit the International Baccalaureate guide page (<https://www.northeastern.edu/admissions/wp-content/uploads/2016/09/International-Bac-Chart-2016.2017.pdf>) for an up-to-date IB listing.

Swiss Federal Maturita Diploma

The university awards credit for a final score of 4 or higher on a 6-point scale or 6 or higher on a 10-point scale.

ADDITIONAL INFORMATION FOR INTERNATIONAL APPLICANTS

International student applications are reviewed considering their performance in their particular academic environments. SAT or ACT scores are not required for applicants who will graduate from schools located outside the United States. International citizen applicants who attend a high school in the United States are required to submit test scores. U.S. Department of Defense school students are required to submit SAT or ACT scores.

In order to maintain lawful student status in the United States, international students must be mindful of the rules and regulations that govern their nonimmigrant visa classification. Numerous U.S. federal mandates and regulations, including the Student and Exchange Visitor Information System (SEVIS), make it especially important for students in the “F” (student) and “J” (exchange visitor) categories to consult regularly with an international student advisor at the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) before taking any action that might affect their immigration status and educational endeavors in the United States.

International students in F-1 and J-1 status must register as full-time students (minimum of 12 credits) and on time (within the appropriate registration period) each term during the regular academic year. In addition, international students must not begin, extend, or resume any type of employment without first obtaining proper employment authorization or verification from the OGS. Any exceptions to full-time registration requirements must be preapproved by the OGS in accordance with specified federal regulations.

In order for prospective F-1 and J-1 students to start their undergraduate program here, they must obtain the certificate of eligibility from OGS. For F-1 students, this document is called Form I-20, and for J-1 students, this document is called Form DS-2019. The international student will

need to complete the e-form on the myOGS system and work with the undergraduate admissions office to meet all requirements needed for successful submission of the request for I-20 or DS-2019. Once the request is approved by the undergraduate admissions office, the OGS will get a request for the student's I-20 and will need 10 business days to generate the student's certificate of eligibility. Students then are able to apply for their F-1 or J-1 visa stamp at a U.S. consulate overseas and, if the visa is granted, enter the United States no earlier than 30 days prior to the start date of their academic program to begin their studies here.

An international student may attend Northeastern in a nonimmigrant status other than F-1 or J-1 only if U.S. Immigration regulations allow for study in the United States under that specific nonimmigrant visa classification. Some international students must apply and be approved for a change of status (e.g., from F-2 to F-1) before beginning their program at Northeastern. For information on nonimmigrant visa statutes other than F-1 and J-1 (including eligibility to work in the United States or participate in co-op and other forms of experiential learning required by your academic program), contact the OGS at ogs@northeastern.edu. Not all visa categories allow for internships, co-ops, international travel associated with an academic program, and/or other experiential learning opportunities. Note that some academic programs at Northeastern have experiential learning requirements (e.g., co-op or study abroad). Nonimmigrant visa statutes other than F-1/J-1 may not allow for those requirements to take place and, as such, may impede the successful completion of your program of study.

REQUIREMENTS FOR APPLICANTS WHOSE PRIMARY LANGUAGE IS NOT ENGLISH

Students whose native language is not English, regardless of their country of citizenship or residence, are required to submit official results of the Test of English as a Foreign Language (TOEFL), the English Test of the International English Language Testing System (IELTS), or the Pearson Test of English (PTE). Applicants must present the required minimum passing scores for admission.

COLLEGE, MAJOR, AND LENGTH OF PROGRAM SELECTION

Applicants to Northeastern University apply to one of our seven undergraduate colleges or to the Explore Program for undeclared students.

We encourage students to select a major that reflects their current academic interests and aspirations; however, the Explore Program for undeclared students provides opportunities to explore our various disciplines and programs. Northeastern offers advisory programs for students interested in preprofessional programs, including medical, dental, law, and veterinary graduate school. Transfer students may not apply to the Explore Program for undeclared students.

Northeastern University offers a broad and deep curriculum that is flexible, and the academic calendar allows students to maximize experiential learning opportunities, including research, study abroad, and our signature co-op program. Students become architects of their own paths, charting their unique course that determines their time to degree. Students can build a program that is four years or five years and gain up to 18 months of full-time experiential learning. Freshmen can participate in NUterm in Summer I of their freshman year, taking advantage of exciting and unique course offerings or regular classes during the May/June semester. By participating in NUterm, students take advantage of Northeastern's signature flexibility, beginning their sophomore year with an additional half term completed. Many colleges offer PlusOne programs, which link undergraduate work with graduate studies. See the detailed curricula in this catalog for more information.

Admission Requirements for the College of Arts, Media and Design

GUIDELINES FOR PORTFOLIO SUBMISSION

All portfolios should be submitted electronically via SlideRoom. Hard-copy portfolios will not be accepted and cannot be reviewed.

STUDIO ART

Applicants for the studio art major, a joint program of Northeastern University and the School of the Museum of Fine Arts, Boston, are required to submit a portfolio through SlideRoom. This portfolio requires a minimum of 15 individual images of original artwork. The portfolio may include work in a variety of media; no particular subject matter or style is required. Rather, students should select work that best shows their personal style, creativity, and commitment to innovation. Check the Department of Art + Design website (<http://www.northeastern.edu/camd/artdesign>) for more information.

MUSIC COMPOSITION AND TECHNOLOGY

Beginning in spring 2018, portfolios are no longer required for students applying to music composition and technology.

MUSIC PERFORMANCE

Once enrolled, students in any music concentration may also audition to pursue a minor in musical performance. This program is highly competitive and therefore requires evaluation by the Department of Music. Auditions are typically scheduled during a student's first semester at Northeastern. For specific questions regarding the program or audition requirements, please reference the CAMD website (https://camd.northeastern.edu/music/academic-programs/minor-in-music-performance/#_ga=26162929219060109681522070914-16965839841517851807).

University Honors Program

The University Honors Program values integrated, student-directed, and experiential learning that is personalized to meet students' unique interests and goals. Our community of intellectually engaged students, advisors, and faculty are committed to making a difference at home and in the world. Students benefit from unique and enriched educational options that include stimulating courses and opportunities for global exploration, research and creative endeavors, service-learning, mentoring, and more. Honors students are guided and supported as they chart their unique educational plans through personalized advising and through their participation in a set of networked communities that include Honors Living Learning Communities.

All applicants seeking freshman entry at Northeastern University (for fall semester entry) are considered for admission into the University Honors Program and are notified of their selection in their letter of admission. There is no separate application. Continuing students in their first or second semester who wish to be considered for the University Honors Program may consult the program's website for instructions on how to apply: www.northeastern.edu/honors. (<https://www.northeastern.edu/honors>)

Specialized Entry Programs

Northeastern University offers admission and enrollment programs and opportunities that advance the university's mission and help meet students' needs. Students who apply for admission to Northeastern may be automatically offered direct entry into some of these programs or, in some cases, may be referred for consideration into other programs. These selections are based on a holistic review of student credentials.

Northeastern is continually assessing our specialized entry programs and opportunities, and additional programs and opportunities may become available while existing programs and opportunities may be modified.

For a complete list of our specialized programs and opportunities, visit the specialized programs webpage (<https://www.northeastern.edu/admissions/academics/specialized-entry>).

The N.U.*in* Program

Northeastern enrolls selected new students in the spring semester through The N.U.*in* Program. During the fall semester N.U.*in* participants study abroad at a partner institution earning transfer credit and enroll in classes as part of the Northeastern community in Boston in the spring. These transfer credits earned are guaranteed to be valid at Northeastern but might not be accepted by other institutions. Participants have studied at partner institutions located in Australia, Canada, China, England, Germany, Greece, Ireland, and Italy in recent years.

General Studies Program

General Studies is a first-year program designed to help students build skills for academic success in their freshman year and beyond. General Studies students spend their freshman year immersed in a combination of first-year requirements, NUpath courses, and introductory courses for their intended major. See additional information (p. 47).

Foundation Year

This first-year college program is designed for recent high school graduates and General Equivalency Diploma (GED) completers from the city of Boston who would benefit from a more structured and supportive first year in order to be successful in the rest of their college career. Foundation Year offers students rigorous academic and career preparation as well as wraparound support services that include advising, tutoring, mentoring, social networking, and work-ready skill development.

Torch Scholars Program

The Torch Scholars Program is a comprehensive support program for first-generation college students who have already succeeded against the odds but who have not yet reached their full academic potential. After a holistic review and thorough interview process, selected Torch Scholars are granted admission to the university and awarded a full-tuition, fees, and room-and-board scholarship for our Summer Immersion Program and eight subsequent semesters of undergraduate study.

N.U. *Bound*

N.U. *Bound* is a first-year college program for non-U.S. citizens that provides rigorous academics and acculturation support to ensure a smooth transition to Northeastern in the student's second year. The fall and spring academic terms are delivered in the city of Suzhou, China, through a partnership with the China Institute, while the final phase of N.U. *Bound* is a two-week prematriculation program delivered at Northeastern University's Boston campus. Please note, N.U. *Bound* provides a conditional offer of admission to Northeastern upon successful completion of the program.

N.U. *Immerse*

N.U. *Immerse* is a transitional experience for students who require English-language preparation and are looking to earn credit while gaining an introduction to the American education system and college culture. Students will improve language and academic skills through a specially designed two-semester curriculum. N.U. *Immerse* offers conditional admission to undergraduate degree programs upon successful completion of the program.

ContiNUe

ContiNUe is a yearlong academic program for first-year students, many of whom are continuing their family legacy at Northeastern. With a focus on preparing our students to be leaders, ContiNUe teaches students transferable skills such as problem solving, decision making, and the game-changer mindset. ContiNUe students complete two semesters of first-year courses through the College of Professional Studies. Students then participate in NUterm before beginning their second full year. ContiNUe provides a conditional offer of admission to Northeastern upon successful completion of the program.

The American Classroom Program

Please note that beginning in fall 2018, students may only apply directly to the American Classroom program. Students will no longer be referred to the program through the undergraduate admission process.

Merit Scholarships

Northeastern provides highly selective scholarship programs aimed at rewarding and recognizing outstanding academic achievement. All applicants who apply on time are considered for these scholarships and no additional applications are necessary. Please note that scholarship consideration is separate from the financial aid application process. International students are eligible for merit scholarship consideration, but Northeastern University does not offer need-based assistance to international students.

National Merit Finalist and National Hispanic Scholar Scholarships

Award: A scholarship for admitted freshman applicants who are designated National Merit Finalists or National Hispanic Recognition Program Scholars. Students who are National Hispanic Recognition Program Scholars must submit documentation to Northeastern by the posted deadline. National Merit Finalists must rank Northeastern as their school of choice by the posted listing deadline. Recipients who maintain normal progress toward a degree, with the minimum 3.000 grade-point average, may renew the award for the full eight-semester program.

Eligibility: Admitted freshman applicants who are U.S. citizens or documented permanent residents and have been designated National Merit Finalists by the National Merit Scholarship Corporation (NMSC) and students identified as National Hispanic Recognition Program Scholars.

Merit Scholarships

Awards: Students who are in the top 10 to 15 percent of our applicant pool are considered for competitive merit awards, including Dean's, Connections, and International Scholarships. Recipients who maintain normal progress toward a degree, with a minimum grade-point average of 3.000, may renew these awards.

Northeastern Honors Program

Each year, the admissions office selects a group of students to join the University Honors Program at Northeastern University. Those invited into the Honors Program are among our most highly accomplished admitted students. There is no separate application process for the Honors Program, and students are considered at all decision deadlines. Decisions are rendered based on the undergraduate admissions application submitted to the university. The invitation to join the University Honors Program is included in the official admission letter. Additional details regarding scholarships and grants for Honors Program students may be found online (<http://www.northeastern.edu/honors/community/honors-program-scholarships>).

Phi Theta Kappa Scholarships (Transfer Students Only)

Award: A grant recognizing high levels of academic achievement in the beginning years of college. Recipients who maintain normal progress toward a degree, with a minimum grade-point average of 3.000, may renew the award.

Eligibility: Applicants for fall transfer admission who have earned a 3.500 grade-point average in 32 semester hours or equivalent quarter hours or units of college-level course work. For eligibility, you must be a U.S. citizen or a permanent resident enrolling directly from a two-year institution of higher education.

Ujima Global Leaders Program

The Ujima Global Leaders Program is a scholarship program focused on developing leaders for tomorrow's diverse and complex world. Ujima Global Leaders from all academic disciplines will work collaboratively to develop intercultural competence and awareness by engaging with communities on campus, throughout Boston and the world. Working with staff and faculty, Ujima Global Leaders may choose to make an impact based on their interests and goals via community service involvement, experiential opportunities, and research and global experiences. Committed to excellence, academic achievement, service, and diversity, Ujima Global Leaders will be prepared to meet the challenges of tomorrow. The Ujima Global Leaders Program seeks to enroll academically talented first-year students with demonstrated leadership skills, community involvement, and/or an interest in issues related to serving underrepresented and underserved populations. Recipients receive a scholarship called the Ujima Global Leadership Award, and those with demonstrated financial need will have their full need met. Ujima Global Leaders are expected to participate in Northeastern's Civic Engagement Program and complete 50 hours of community service each year.

Contact the Office of Undergraduate Admissions if you have any questions about the application process.

Office of Undergraduate Admissions
Northeastern University
360 Huntington Avenue
Boston, MA 02115-5000 USA

Website (<https://www.northeastern.edu/admissions>)
admissions@northeastern.edu
617.373.2200
617.373.8780 (fax)

Credentials not being submitted online (transcripts and recommendations) should be mailed to our Application Processing Center. Please check the admissions website (<https://www.northeastern.edu/admissions>) for the most current address.

Application fees; application fee waiver requests (being sent separate from the application); and FedEx, UPS, or Priority Mail packages must be mailed to the following address:

Office of Undergraduate Admissions
200 Kerr Hall
Northeastern University
360 Huntington Avenue
Boston, MA 02115-5000 USA

For more information, consult the admissions website (<https://www.northeastern.edu/admissions>).

Information for Entering Students

- Student Orientation (p. 16)
- Orientation for International Students (p. 16)
- Parent/Family Programs (p. 16)
- Residential Life (p. 17)
- Health Requirements—University Health and Counseling Services (UHCS) (p. 17)
- English-Language Testing (p. 17)
- Accommodations for Students with Disabilities (p. 17)
- We Care (p. 17)
- Information Technology Services (p. 17)

Student Orientation

It is **mandatory** for all incoming first-year and transfer undergraduate students to participate in **student orientation** hosted by the Office of Student Orientation and Parent/Family Programs.

Students beginning in the fall will attend sessions during the months of June and July. Students starting in the spring will attend a session in January prior to the start of the semester. Once a student officially commits to the university by paying the enrollment fee, they will have the ability to register for student orientation through the myNortheastern (<https://my.northeastern.edu>) admitted student portal.

At orientation, students will get acclimated to campus and Boston, prepare for the start of the academic year, and experience what makes Northeastern unique. Students will also register for classes, get their student ID card, and partake in a variety of activities to meet fellow classmates.

The undergraduate student fee supports student orientation costs, including the opportunity to have *two complimentary guests* participate in the **Parent/Family Orientation**. This is a tuition-based fee; more information may be found on the Student Financial Services (<https://studentfinance.northeastern.edu>) website.

Undergraduate **international students (non–U.S. citizens)** are required to attend the student orientation session immediately preceding the start of the fall academic semester. The Office of Global Services (OGS) (<https://www.northeastern.edu/ogs>) will host a specialized presentation that will be incorporated into the two-day student orientation program; separate registration is not required. Following student orientation, OGS will continue with acculturation programming, such as regional excursions and intercultural/diversity education seminars. Students who are U.S. citizens, but reside abroad, are more than welcome to join OGS sessions/activities.

The Office of Student Orientation and Parent/Family Programs
101 Ell Hall
Northeastern University
360 Huntington Avenue
Boston, MA 02115

Website: [northeastern.edu/orientation](http://www.northeastern.edu/orientation) (<http://www.northeastern.edu/orientation>)
Phone: 800.696.6516
Email: orientation@northeastern.edu

Orientation for International Students

The Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) organizes year-round orientation and acculturation programming throughout the year for newly arrived international students and U.S. citizens from abroad. OGS's International Student Orientation provides a unique forum for intercultural interaction and learning, with activities that include an "airport welcome," cultural enrichment programming, information sessions, F-1 or J-1 international student advising, regional excursions, and educational seminars that bring a cross-cultural focus to topics such as academic success, student life, and the dynamics of diversity. OGS's mandatory International Student Online Check-In process and orientation begin prior to the start of the fall and spring semesters, comprising several weeks of activities that provide international students (and others who have lived abroad) an opportunity to gain familiarity with Northeastern in a cross-cultural context while also serving to facilitate the formation of friendships across cultures.

International students holding an F-1 or J-1 visa should plan to arrive several days before the start of the semester as outlined in the OGS orientation schedule in order to attend the scheduled International Student Orientation program and complete the International Student Online Check-In process. All matriculating international students will have access to a preliminary schedule from the OGS prior to their arrival in the United States. Immediately prior to the start of the semester, the Office of New Student Orientation organizes mandatory orientation and academic advising.

For further details on the OGS International Student Orientation and Online Check-In process, and for other information pertinent to international students, contact:

The Office of Global Services (OGS))
405 Ell Hall
Northeastern University
360 Huntington Avenue
Boston, MA 02115

Website (<http://www.northeastern.edu/ogs>)
617.373.2310

Parent/Family Programs

The Office of Student Orientation and Parent/Family Programs assists families in making connections with the university and its resources during their student's time at Northeastern. The office helps with a broad spectrum of issues—academic, administrative, and personal.

The office hosts several events each year, including Parent & Family Weekend, and provides timely communications on important campus news and events through their website (<http://northeastern.edu/parents>), Parent Matters newsletters, Facebook (<https://www.facebook.com/ParentFamilyProgramsAtNortheasternUniversity>) page, Tuesday Talks webinars, Parent Corner Message Board, and Parent Portal.

Parents and guardians of students can create an online Parent Portal account by visiting the myNortheastern web portal (<https://my.northeastern.edu>), through which their student may grant them access to services related to their Northeastern experience.

The Office of Student Orientation and Parent/Family Programs
101 Ell Hall
Northeastern University
360 Huntington Avenue
Boston, MA 02115

Website: northeastern.edu/parents (<http://northeastern.edu/parents>)
Phone: 800.696.6516
Email: parents@northeastern.edu

Residential Life

The Department of Residential Life strives to create a community for our residents by planning programs and activities that help students get to know others on their floor and in their residence hall. We also provide services that support our residents in accomplishing their academic and personal goals. Residential Life staff are trained in counseling, crisis intervention, and conflict resolution, as well as interpersonal communications, in order to assist our students to achieve their aspirations.

Each hall is supervised by a professional residence director and student resident assistants, who work together to maintain close contact with students to help make their experience living on campus a positive one.

The university offers a variety of housing options tied to specific programs of study for first-year students known as Living Learning Communities (LLCs). The LLCs offer students a supportive, achievement-oriented environment with opportunities for friendship around common interests as well as continued learning and sharing outside the classroom. LLCs commonly feature tutoring, advising, and study groups as well as unique programs designed to promote student growth and advancement.

Health Requirements—University Health and Counseling Services (UHCS)

Prior to entering Northeastern, all enrolled students must complete and submit a Health Report to University Health and Counseling Services (UHCS). It must be completed and returned by the stated deadline. The required record of immunity section is necessary for compliance with the Massachusetts Immunization Requirements for College-Age Students. Failure to meet the requirement will prevent future course registration. Additionally, further documentation of immunity is mandatory for students in Bouvé College of Health Sciences.

Visit the UHCS website (<http://www.northeastern.edu/uhs>) to access the Health Report online.

English-Language Testing

NU Global conducts English-language testing for international students who are referred for this service. The testing takes about two hours. The NU Global Test measures English composition, listening comprehension, grammar, vocabulary, and reading comprehension and is administered by the NU Global Office at Northeastern University.

Any department may refer students for testing. Students must arrive on time on designated test days. Referral forms and a schedule of test dates are available to departments by request. Departments should contact cpsadmissions@northeastern.edu for more information.

Accommodations for Students with Disabilities

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability. Accommodations are provided based on an evaluation of the information provided by students and their clinicians, on a case-by-case basis. These services are available for, but not limited to, students with the following diagnoses:

- Learning disabilities and/or AD(H)D
- Autism spectrum disorders
- Chronic or degenerative disorders
- Hearing loss
- Mobility impairments
- Psychiatric disorders
- Traumatic or acquired brain injury
- Vision impairments

Students should provide documentation to the DRC at their earliest convenience to allow for sufficient time for review. After the documentation has been reviewed, a disability specialist will contact the student regarding appropriate next steps. Visit the DRC website at: <http://www.northeastern.edu/drc/> for additional information or contact staff at 617.373.2675.

We Care

We Care is a program that assists students experiencing unexpected challenges maintaining their academic progress. We Care works with the student to coordinate among university offices and to offer appropriate on- and off-campus referrals to support successfully resolving issues. For further information, contact:

We Care
104 Ell Hall
617.373.4384
Website (wecare@northeastern.edu)
www.northeastern.edu/wecare (<http://www.northeastern.edu/wecare>)

Information Technology Services

617.373.4357 (xHELP)
help@northeastern.edu
Website (<http://www.northeastern.edu/its>)

Information Technology Services (ITS) is the centralized technology resource for students, faculty, and staff. ITS provides secure, high-speed internet access through the on-campus networks NUnet and ResNet; wireless internet connectivity through NUwave; centralized computer labs—the InfoCommons and the Digital Media Commons (DMC)—with the latest software; on-site and remote printing; access to the Blackboard learning management system; a vast array of software applications for Windows and Mac; access to myNEU, Northeastern's online portal; on-site and online training on popular software; and high-performance research computing.

ITS Service Desk

Help and Information Desk, Snell Library
617.373.4357 xHELP
help@northeastern.edu

The ITS Service Desk provides phone-based and walk-up technology support services to students, faculty, and staff. The ITS Service Desk staff also offers support for ITS-managed printers and answers general computing questions. Contact the ITS Service Desk for the following services:

- Troubleshooting Northeastern University–provided accounts and applications, including email
- Investigating wired and wireless network connection problems
- Troubleshooting network printer problems
- Assisting students with myNEU and Blackboard questions
- Support with ITS-managed labs
- Access to equipment available for loan, including AV equipment and laptop adapters

The ITS Service Desk is located at the Help and Information Desk on the first floor of Snell Library near the InfoCommons and provides assistance on computer-related issues to students, faculty, and staff with a valid Northeastern ID.

myNEU

Website (<http://myneu.neu.edu>)

myNEU—the online portal for the Northeastern community—is a central resource for students, faculty, and staff. Your myNEU username and password provide access to key university platforms, from the myNEU portal to other university systems, including wireless network access, printing, and email.

The myNEU portal offers services tailored to your role at Northeastern for all academic, personal, and recreational needs. Resources available for students include links to student email, information channels, financial aid, Blackboard, and online course registration. NU Alert, our real-time university emergency notification system, utilizes the contact information provided within myNEU. It is your responsibility to maintain accurate personal and emergency contact information.

ResNet and the ResNet Resource Center

Speare Commons
617.373.HELP (x4357)
resnet@northeastern.edu
Website (<http://www.northeastern.edu/resnet>)

ResNet—a service of Information Technology Services and Housing Services—provides internet access to all students living in Northeastern residence halls. The ResNet Resource Center, located in Speare Commons, provides students with support for the HuskyCable TV service, mobile devices, gaming systems and other devices, student email, computer troubleshooting, and repair services for Apple and Dell computers.

Printing

The Northeastern Printing Program provides a limited amount of free printing each year to students, faculty, and staff. Each September, as an active member of the community, you are given a credit of \$120 on your Husky Card to use at your discretion at any of the ITS-managed printers located across campus. Print credits do not carry over from one academic year to the next.

Print jobs can be directly sent to the appropriate printer queue from any ITS computer labs or from your own computer by using the Virtual Print Client software to remotely print. When you locate a printer associated with the appropriate printing queue, simply swipe your Husky Card, select your print job, and it will print.

Appropriate Use Policy

The information systems of Northeastern University are intended for the use of authorized members of the community in the conduct of their academic and administrative work. The Appropriate Use Policy (AUP) describes the terms and conditions of Northeastern information systems use. For more information, visit the Appropriate Use Policy webpage (<http://www.northeastern.edu/aup>).

Training Services

Snell Library
617.373.5858
training@northeastern.edu

Information Technology Services training provides the following instructor-led and web-based courses to all members of the Northeastern community:

- **Web-based training.** ITS training offers computer training over the internet, including Mac tutorials, MS Office tutorials, some application-specific training provided by the application vendors, and via Lynda.com, which offers 24/7 access to an extraordinary breadth of training modules. Web-based training is an innovative, self-paced learning method that allows students, faculty, and staff to train anytime or anywhere, using a computer with an internet connection.
- **Instructor-led training** includes classes such as Public Speaking for Presentations, Advanced Excel, SharePoint, Adobe Photoshop, and Blackboard. These workshops are available at no charge to the entire university community.

To register for a class, visit the training section of the ITS website.

Academic Technology Services (ATS)

212 Snell Library
ats@northeastern.edu
Website (<http://www.ats.neu.edu>)

For graduate students performing teaching assistant/graduate assistant work, Academic Technology Services (ATS) is a resource for choosing and implementing technological solutions for a wide range of classroom goals. Whether creating online classes or incorporating flipped classroom techniques into on-ground classes, ATS offers consultation and support for implementation. Additionally, ATS manages the Discovery Lab, located on the first floor of Snell Library, which is a space for showcasing ideas and innovations at Northeastern. The Discovery Lab is an area to host both events and exhibitions.

College Expenses

Student Financial Services is available to assist you in developing a plan for financing a Northeastern education. Through a variety of options, including financial aid, Northeastern's Monthly Payment Plan, supplemental loans, and your own resources, a plan can be designed that will make your education costs affordable. To learn more, visit the Student Financial Services website (<https://studentfinance.northeastern.edu>) or call 617.373.3190.

- Financial Aid (p. 19)
- Student/Parent Loans (p. 19)
- Bill Payment (p. 20)
- Tuition, Room, Board, and Fees Per Semester (p. 21)

Financial Aid

For many families, financial aid is a major element in making Northeastern University affordable. Student Financial Services provides a full range of options that help students establish a comprehensive plan to finance their education.

How to Apply

To apply for federal financial aid, freshmen and transfer students must submit the Free Application for Federal Student Aid (FAFSA) (<https://fafsa.gov>). Additionally, for institutional aid consideration, freshmen and transfer students must also complete the CSS Profile (<https://cssprofile.collegeboard.org>) form. Returning students must submit the FAFSA each academic year. Submitting your financial aid application materials by the priority filing deadline date will ensure that you are considered for all available financial aid programs for which you qualify. To view the priority filing deadline dates, please visit the Student Financial Services website (<https://studentfinance.northeastern.edu/applying-for-aid/undergraduate/how-to-apply>).

Satisfactory Academic Progress (SAP)

QUALITATIVE

Student grade-point averages (GPAs) are reviewed annually at the end of spring semester. Freshmen students must have at least a 1.800 GPA by the end of their first academic year and a 2.000 GPA or better thereafter to retain financial aid eligibility. For students completing their sophomore year and beyond, a GPA of 2.000 is required to retain eligibility.

QUANTITATIVE

Students must also meet certain quantitative requirements. Completed credits are reviewed as a percentage of attempted credits after each academic year. Students must earn at least 67 percent of their cumulative attempted credits to maintain satisfactory academic progress.

APPEALS

Students who have lost their eligibility for financial aid due to failure to meet qualitative or quantitative SAP standards have the right to submit a letter of appeal to Student Financial Services. Approval of an appeal will be based on extenuating circumstances that had an impact on the student's ability to achieve the minimum standards of SAP and the assurance that these circumstances will not be present going forward. If approved, appeals require a contractual agreement that must be signed by the student and a financial aid administrator.

Change in Enrollment Status

Students must notify Student Financial Services about any change in planned period of enrollment, whether due to withdrawal from a class, a leave of absence, a change in co-op or in class, an approved reduction in course load, or withdrawal from the university. Changes in enrollment may impact types and amounts of financial aid offered by Northeastern University.

It is highly recommended that whenever possible, students discuss the impact of such changes with their financial aid counselor before making them.

Outside Sources of Aid

Students must notify Student Financial Services of any aid received from outside sources, such as scholarships from outside organizations. A review and possible recalculation of a student's financial aid award will occur.

Return of Title IV Aid

Northeastern is required by federal statute to recalculate federal financial aid eligibility for students who withdraw, drop out, are dismissed, or take a leave of absence prior to completing 60 percent of a term. Recalculation is based on the percentage of earned aid using the Federal Return of Title IV funds formula. Federal regulations require students to obtain at least an A, B, C, D, S, or F in at least one course for the term; students who receive all unsuccessful grades for a term (NE, W, I, U) will be considered unofficially withdrawn from the term. For unofficial withdrawals, the withdrawal date used for aid recalculation is the midpoint of the term.

Verification

If a student is selected for Verification, Student Financial Services may be required to collect additional financial documents, including tax returns and other financial documents, to verify the information provided on the FAFSA. Aid cannot be determined until this process is completed.

Change in Circumstances

If the student believes that the aid process does not accurately reflect their financial situation, or if family circumstances change during the year, the student should notify their financial aid counselor for further evaluation. For additional information, please refer to the Student Financial Services website (<https://studentfinance.northeastern.edu/policies-procedures/changes-in-financial-circumstances>).

Northeastern's Monthly Payment Plan

Northeastern University offers a monthly payment plan, administered through Tuition Management Systems (TMS), which allows students and families to divide their educational costs into smaller, more manageable installments. For additional information, visit the financing options webpage (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).

Student/Parent Loans

There are a number of educational loan programs available to assist students and families in covering expenses over and above any financial aid that may be awarded from Student Financial Services. Most private lenders have credit and income requirements that students and/or parents must meet before being approved for these programs. Additional information regarding private student and parent

loan options is available on the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/financing-options>). When researching the loan and lender that best meet your needs, make sure you take into consideration the interest rate, origination, disbursement, repayment fees, and the quality of customer service.

Bill Payment

Full payment of tuition, residence hall fees, and other related charges are due prior to the start of the term as specified on the original bill. A past-due balance may result in late fees, prevention of registration, prevention of grade release, prevention of participation in international study programs, or withdrawal from the university.

Tuition bills are only generated electronically and are available via the myNortheastern portal (<https://my.northeastern.edu>). Paper bills are not generated. For additional information regarding the E-bill, please visit the billing frequently asked questions webpage (<https://studentfinance.northeastern.edu/billing-payments/billing-faq>). For details on available payment methods, visit the payment methods webpage (<https://studentfinance.northeastern.edu/billing-payments/payment-methods>).

Payment of Tuition

Accepted methods of payment are:

- Checks and E-checks can be made on the web via NUPAY on myNortheastern (<http://myneu.neu.edu/cp/home/loginf>). Check or money order, payable to Northeastern University.
- Through the monthly payment plan, administered through Tuition Management Systems. For additional information, visit the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).
- Supplemental student and parent loans. Review options on the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).
- Additional payment options and payment details are available online (<https://studentfinance.northeastern.edu/billing-payments/payment-methods>).
- International payments using Flywire. Northeastern University has partnered with Flywire to streamline the international wire payment process to the university. This service provides students and their families a safe, cost-effective, and convenient method of making payments to Northeastern University in foreign currencies. Review how to initiate payment at the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/payment-methods>).

Student Financial Responsibility Agreement

As compelled by Federal Law, all students who enroll in classes at Northeastern University are required to complete and accept the Student Financial Responsibility Agreement (SFRA). This agreement must be completed once per academic year, and is located on the student's myNortheastern portal. Failure to complete the SFRA will result in a hold which prevents registration.

Discrepancies in Your Bill

Discrepancies in a bill should be addressed in writing by the student to the Office of Student Accounts at studentaccounts@northeastern.edu. Include the student's name, NU ID,

dollar amount in question, date of invoice, and any other information believed to be relevant.

If there is a billing problem, pay the undisputed portion of the bill to avoid responsibility for any late fees.

Overloads/Reduced Loads

Undergraduate day tuition is charged on a flat per-term basis that includes the cost of each student's normal academic curriculum requirements for that term.

Adjustments for reduced loads are made only when the Undergraduate Petition to Reduce Load is approved by the academic department and the Office of the University Registrar, usually only in the final term. International students who wish to drop below 12 credits during the semester must obtain authorization from the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>). These students may be approved for a reduced course load of fewer than 12 credits but no fewer than 6 credits in accordance with federal regulations. Tuition adjustments will then be made if the course load falls below 12 credits during full semesters and 6 credits during summer half sessions (calculated at the per-credit-hour rate). To receive an adjustment, the Undergraduate Petition to Reduce Load must be submitted prior to the start of the term. No rebate or credit is granted when a student voluntarily drops a course.

Financial adjustments for course work greater than the prescribed curriculum for the term is calculated at the per-credit hour rate for undergraduate full-time students. Students taking more than 8 credits (summer half session) or 16 credits (full semester) will be charged at the per-credit hour rate.

Undergraduate full-time day students registered for co-op and taking a class will be billed at the per-credit-hour rate for the course. The flat undergraduate tuition rate will be charged for students on co-op enrolled in 12 credits or more.

Visit the tuition and fees webpage (<https://studentfinance.northeastern.edu/billing-payments/tuition-and-fees>) for a full listing of tuition rates. Also see "Overload Policy (p. 27)" and "Reduced Load Policies (p. 27)."

Delinquent Balances

In cases of student default on tuition payments, the student may be withdrawn from the university and is liable for the outstanding tuition, as well as for all reasonable collection costs and any legal fees incurred by the university during the collection process. Accounts may be subject to monthly interest charges. *Transcripts and other academic records will not be released until all financial obligations to the university have been met.*

Refunds on Credit Balances

To submit a request for a refund on a credit balance because of an overpayment, a Student Refund Request must be submitted. This form can be completed through the student's myNortheastern portal (<https://my.northeastern.edu>), under "Services & Links."

Visit the financial aid policies webpage (<https://studentfinance.northeastern.edu/policies-procedures>) for additional information regarding Student Refund Requests.

Refunds for Withdrawal from the University—General Information

Tuition refunds are granted based on the date of the official withdrawal processed by the Office of the University Registrar. Nonattendance does not constitute official withdrawal. Credit policies vary according to the

duration of the course. Typical tuition adjustments are made according to the schedules shown below.

The first week of class is the week containing the “Classes Begin” date listed in the online academic calendar (<https://registrar.northeastern.edu/group/calendar>).

Payment options and credit policies may vary for courses that follow a schedule different from the regular full or half-semester courses. If you are unsure about a course you are taking, contact the Office of Student Accounts.

Transcripts and other academic records will not be released until all financial obligations to the university have been met. All rates are subject to revision at the discretion of Northeastern University’s Board of Trustees.

For information regarding policies that affect eligibility for federal grants and loans upon your withdrawal or adjustment to course enrollment, visit the Student Financial Services website (<https://studentfinance.northeastern.edu>). Note that withdrawal policies vary for international study programs. For more information on study-abroad-related withdrawal policies, refer to the Global Experience Office (<http://www.northeastern.edu/geo/studyabroad>).

Refunds for Course Withdrawals

Undergraduate day students should refer to the “Overload Policy (p. 27)” and “Reduced Load Policies (p. 27)” for information on adjustments for withdrawing from individual course(s). For withdrawals from a course after the third week of a full semester, contact studentaccounts@northeastern.edu.

Refunds for Complete Withdrawal from the University

FULL SEMESTERS

Official withdrawal during the first week	100% refund
Official withdrawal during the second week	100% refund
Official withdrawal during the third week	100% refund
Official withdrawal during the fourth week	60% refund
Official withdrawal during the fifth week	40% refund
Official withdrawal after the fifth week	no refund

SUMMER HALF SEMESTERS

Official withdrawal during the first week	100% refund
Official withdrawal during the second week	100% refund
Official withdrawal during the third week	50% refund
Official withdrawal during the fourth week	25% refund
Official withdrawal after the fourth week	no refund

Disability Resource Center Adjustments

Students who are registered with Northeastern University’s Disability Resource Center (<http://www.northeastern.edu/drc>) are eligible to petition to the center for tuition adjustments directly related to their

documented disability. Students who drop below 12 credit hours may be affected by the loss of full-time-student status. Further information is available from the Disability Resource Center.

Tuition, Room, Board, and Fees Per Semester

Annual costs for upperclass students participating in co-op vary depending on their pattern of attendance. See “Patterns of Attendance” section below. The number of semesters a transfer student spends in school depends on the curriculum of the student’s college. You are advised to verify your curriculum with your academic advisor so that you may plan accordingly.

Total Costs

The total costs for students living in our residence halls and enrolled in the 15-meal plan are as follows:

TUITION AND FEES

	Per Full Semester	Per Summer Half Semester
Tuition	\$25,225	\$12,613
Student center fee	\$75	\$38
Student activities fee	\$136 (per year)	
Campus recreation fee	\$56	\$33
Undergraduate student fee	\$310	\$155

ROOM, BOARD, AND FEES PER SEMESTER

	Per Full Semester	Per Summer Half Semester
Residence activity fee	\$32	\$16
Housing	range from \$4,470–\$5,720 ¹	approximately 1/2 of semester rate ¹
15-meal plan ²	\$3,665	\$1,833

¹ Rates vary depending on occupancy and assignment. Visit the housing website (<http://www.northeastern.edu/housing>) for a detailed list of housing rates.

² See “Dining Services (p. 23)” for additional meal plan options.

Undergraduate day students who take a graduate course as part of their undergraduate program will be charged the same rates that apply to undergraduate credits. (See “Overload Policy (p. 27)” and “Reduced Load Policies (p. 27).”)

In addition to the expenses itemized above, families should plan on the normal costs of living that students incur for transportation, books, and personal expenses. While these expenses may vary, for the purpose of approximating a student budget, the university estimates these items at \$2,800 per year.

Tuition rates, room and board charges, and fees are subject to revision by the Northeastern University Board of Trustees at any time.

Patterns of Attendance

To better plan for tuition and fees, students and parents should be aware that:

1. Tuition is charged when a student is taking classes/earning academic credit. Tuition is not charged for co-op; however, the student will pay room and board if he or she stays in a university residence hall while on co-op and will be assessed tuition if enrolled in a class.

- Financial aid will be distributed to match the student's academic program and tuition bills.

Northeastern University's calendar enables students to participate in six-month co-op assignments. Each academic year has two full semesters (fall semester, September–December, and spring semester, January–April) and two half semesters of about seven weeks each (summer 1, May–June, and summer 2, July–August). The six-month co-op assignments generally span either the spring plus summer 1 terms or the summer 2 plus fall terms.

The co-op schedule is flexible, but generally, students alternate periods in class with periods on co-op. All students are required to complete their program in the classroom, rather than on a co-op assignment, so their last semester will be in the classroom. For specific patterns of attendance for particular majors, consult the program plan for that major.

Fees Required of All Students

The following fees are required of all students:

APPLICATION FEE

A nonrefundable fee of \$75 must accompany an application for admission.

ENROLLMENT DEPOSITS

A nonrefundable enrollment deposit, which is applicable toward the first semester's bill, is due by January 15, 2018, from students accepted for Early Decision I, by February 20, 2018, for students accepted for Early Decision II, and by May 1, 2018, from all other accepted freshman students entering in September 2018. A \$350 international student fee is included in the enrollment deposit for international students. This fee supports programs and services provided by the Office of Global Services (OGS) (<https://www.northeastern.edu/ogs>) on campus. Housing is required for all first- and second-year students. Students entering at other times of the year, and transfer students entering in September, should note the required deposit due date on their letter of admission.

UNDERGRADUATE STUDENT FEE

The mandatory undergraduate student fee supports enrollment-related services throughout the student's first year, including new student orientation and welcome week activities. Beyond the first year, the fee supports enrollment services and costs related to ongoing communication to students and parents. The \$310 undergraduate student fee is assessed each in-class or study-abroad term for undergraduate students. During summer half semesters, the fee is prorated.

STUDENT FEES

Students pay a student center fee of \$70 per in-school full semester or \$35 per in-school summer half semester. This fee supports the Curry Student Center. An annual student activities fee of \$136 is charged to support student clubs.

CAMPUS RECREATION FEE

All undergraduate students at Northeastern University will be assessed a campus recreation fee of \$56 per in-school full semester or \$33 per in-school summer half semester. This fee covers admission to home athletic events, use of the Marino Fitness Center, the SquashBusters athletic facility, and the Cabot Gym (fitness and pool). This fee will also support the future construction of athletic fields and facilities.

HUSKY CARD (PHOTO-IDENTIFICATION CARD)

This card is issued to new students at orientation and registration. Students must have a valid Husky Card to use at most university facilities. A replacement card costs \$25.

NORTHEASTERN UNIVERSITY STUDENT HEALTH PLAN (NUSHP)

Since September 1989, Massachusetts law (Massachusetts General Laws, Chapter 15A, Section 18) has required every full-time and part-time student enrolled in a Massachusetts institution of higher learning to participate in a student health insurance program (SHIP) or in a health benefit plan with comparable coverage. Students who have comparable health plan coverage may waive NUSHP by completing a waiver on their myNortheastern portal (<https://my.northeastern.edu>) by the designated deadline date each academic year. For deadlines and additional information, visit the NUSHP website (<http://www.northeastern.edu/nushp>).

Additional Fees

Other fees may include the following:

HOUSING APPLICATION/DEPOSIT

New students must submit a nonrefundable \$600 enrollment deposit along with a completed housing application form to complete the housing application process. Housing is required for all first- and second-year students entering as freshmen. The upperclass housing deposit is \$200 for each full semester and for each summer half semester.

RESIDENCE HALL ACTIVITIES FEE

All students living in the residence hall system pay a full-semester \$32 fee or half-semester \$16 fee for activities sponsored by the Residence Student Association.

LATE FEES

Late fees can be placed on accounts any time after the due date, if the account remains fully or partially unpaid. The university typically waits, however, until after the conclusion of the add/drop period, for the specified semester, prior to assessment of late fees. These fees are based on the amount past due at the time of assessment and can range from \$75 to \$200. Late fees are assessed once per semester.

If a student or payer wishes to dispute a late fee assessment, he or she must do so, in writing, to studentaccounts@northeastern.edu. Please be sure to include the student's name, NU ID, and reason for the dispute in the email.

INTERNATIONAL STUDENT FEE

A onetime fee of \$350 is charged to new undergraduate international students. The fee supports programs and services available at the OGS.

Room and Board

ROOM RATES PER SEMESTER

Visit the Housing and Residential Life website (<https://www.northeastern.edu/housing>) for a complete display of room rates and residence halls.

TERMINATION CHARGE AND ROOM RATE ADJUSTMENTS

The university provides on-campus and leased accommodations that are assigned each term. Students are billed at the beginning of each term and are obligated to pay the full charge for the term. The high demand for on-campus housing makes it necessary for Housing and Residential Life to enforce its cancellation policy strictly. It is imperative to note that a student whose Residence Hall and Dining License Agreement is revoked for disciplinary reasons is subject to the same financial assessments as outlined below.

Students who are suspended or expelled from the university will have their current and any active housing application(s) canceled effective the date of suspension. When suspension or expulsion is sanctioned, the student will be charged according to the "Termination Credit Policy for Official Withdrawal from the University" below. All housing deposits on file will be forfeited. Upon readmittance to the university, the student

must reapply for housing and if capacity has been reached, the student will be placed on the housing waitlist.

Students who withdraw from the university will have their meal plan charges prorated to the end of the week they complete the University Withdrawal form in the Office of the Registrar. Students must also complete the official housing withdrawal form and check out properly with their residence director. Housing charges for students who withdraw from the university will be prorated only through the end of the fifth week of full semesters and through the end of the fourth week of summer half semesters.

Termination Credit Policy for Official Withdrawal from the University Fall and Spring Semesters

Official Withdrawal from University	Room Charge Credited
Week 1	100 percent ¹
Week 2	90 percent ¹
Week 3	80 percent ¹
Week 4	60 percent ¹
Week 5	40 percent ¹
After week 5 ²	0 percent ²

¹ This credit can also be based on the daily charges of time used.
² Students withdrawing after week 5 incur a 100 percent room charge for the term.

Summer Half Semesters

Official Withdrawal from University	Room Charge Credited
Week 1	100 percent ¹
Week 2	75 percent ¹
Week 3	50 percent ¹
Week 4	25 percent ¹
After week 4 ²	0 percent ²

¹ This credit can also be based on the daily charges of time used.
² Students withdrawing after week 4 incur a 100 percent room charge for the term.

Termination Charge Policy for Cancellation from the Residence Halls for Matriculating Students

Failure to provide timely, written notification of cancellation of housing will result in a charge to students for their assigned space. For example, if you are assigned to a room for the fall semester with a rate of \$5,350 and you cancel your housing on June 20, 2017, you will be assessed 50 percent of your room rate, which is \$2,675—not 50 percent of your deposit for the fall term.

If you cancel your housing prior to receiving an assignment, you will be assessed a cancellation fee according to the cancellation schedule at the rate of a standard double room for freshmen or a standard double in an apartment for upperclass and graduate students. If the cancellation deadline has passed, students who can demonstrate a significant change in academic, co-op, or financial circumstances may petition for a waiver of this charge. See the following cancellation charge schedule:

Amount Charged	For Fall Semester	For Spring Semester	For Summer 1	For Summer 2
Deposit refunded; no charge	Before 5/15/17	Before 10/1/17	Before 3/1/18	Before 4/15/18

25 percent of term room charge ¹	After 5/15/17	After 10/1/17	After 3/1/18	After 4/15/18
50 percent of term room charge ¹	After 6/15/17	After 10/15/17	After 3/15/18	After 4/30/18
75 percent of term room charge ¹	After 7/15/17	After 11/1/17	After 4/1/18	After 5/15/18
100 percent of term room charge ¹	After 8/1/17	After 12/1/17	After 4/15/18	After 5/31/18

¹ The student's deposit for the term is applied to the cancellation charge assessed.

DINING SERVICES

All students living in university residence halls that require students to have a meal plan are required to participate in the 19-, 15-, or 10-meal plan operated by University Dining Services.

All freshmen (during their first two semesters as matriculated college students) living in university residence halls are required to have a traditional meal plan. They are required to have at least a 10-meal plan except for those living in university apartments with kitchen facilities. Freshmen living in university apartments with kitchen facilities are required to have at least a 5-meal plan.

Students living in a meal-plan-required residence hall are automatically billed for the 15-meal plan but can increase to a 19-meal plan or decrease to a 10-meal plan. All other students may choose to enroll in a meal plan via the "Services & Links" section on the (<http://www.myneu.neu.edu>)myNortheastern portal (<https://my.northeastern.edu>).

Changes to the meal plan are made via the "Services & Links" section on the myNortheastern portal (<https://my.northeastern.edu>). Deadlines apply. Visit the Husky Card website (<http://www.northeastern.edu/huskycard>) for details.

For information about menus and dining locations, visit the dining website (<http://www.nudining.com>).

The traditional meal plan rates for 2017–2018 are shown below. For updated meal plan rates, visit the tuition and fees webpage (<https://studentfinance.northeastern.edu/billing-payments/tuition-and-fees>).

Meals per Week	Full Semester	Summer Half Semester
19	\$3,970	\$1,985
15	\$3,665	\$1,833
10	\$3,175	\$1,588
5	\$1,630	\$815

PROFILER MEAL PLANS

The nonrefundable profiler meal plan is a block of meals that are provided in lump sum and can be used at the student's discretion. Profiler options are available to all students. However, these plans cannot take the place of a required, traditional meal plan.

Profiler meal plans end in August at the end of summer 2 semester. Students are advised to pay close attention to the end dates, as unused meals do not roll over and will not be refunded. Profiler meal plans for 2017–2018 are valid from August 27, 2017, through August 25, 2018, and may be used at:

- Levine Marketplace
- Stetson West
- International Village
- Outtakes
- Rebecca's Café in Churchill Hall
- West End in Curry Student Center

Note: Dining locations are limited during the summer.

The profiler rates for 2017–2018 are shown below. For updated rates, visit the tuition and fees webpage (<https://studentfinance.northeastern.edu/billing-payments/tuition-and-fees>).

Meals	Cost
25	\$445
50	\$870
86	\$1,465
110	\$1,845

Profiler plans are nonrefundable and cannot be modified.

Husky Dollars

Students can deposit funds into a Husky Dollar account and access these funds using their Husky Card at many restaurants and retail locations on and off campus, including the university's bookstore.

Note that the account accrues no interest and cannot be used for cash withdrawals. Visit the Husky Card website (<http://www.northeastern.edu/huskycard>) for additional information, including vendor locations and instructions on how to add funds to your account.

Academic Policies and Procedures

This section presents general information about what is expected of students and how progress toward graduation is measured. The university assumes no liability for any delay in providing or failing to provide educational or related services or facilities due to causes beyond the reasonable control of the university. Causes include, but are not limited to, power failure, fire, strikes by university employees or others, weather damage, and acts of public authorities. However, when in its judgment it is appropriate to do so, the university will exert reasonable efforts to provide comparable or substantially equivalent services, facilities, or performance; but its inability or failure to do so shall not subject it to liability. No faculty member, administrator, or other representative of the university shall make any representations to, or enter into any agreements with, or act toward any student or other person in any manner that is not in conformity with established university policies, practices, and procedures as expressed in this or any other official university document.

Academic Integrity Policy

The following academic integrity policy was designed and approved by the Student Government Association and was also approved by the Faculty Senate.

Visit the Office of Student Conduct and Conflict Resolution (<http://www.northeastern.edu/osccr/academic-integrity-policy>) website for a full description of these policies and procedures.

Honor Code

The following honor code was designed and approved by the Student Government Association:

On my honor, I pledge to uphold the values of honesty, integrity, and respect that are expected of me as a Northeastern student.

Code of Student Conduct

The Code of Student Conduct (<http://www.northeastern.edu/osccr/code-of-student-conduct>) is available online.

Accommodations for Students with Disabilities

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability. Accommodations are provided based on an evaluation of the information provided by students and their clinicians, on a case-by-case basis. These services are available for, but not limited to, students with the following diagnoses:

- Learning disabilities and/or AD(H)D
- Autism spectrum disorders
- Chronic or degenerative disorders
- Hearing loss
- Mobility impairments
- Psychiatric disorders

- Traumatic or acquired brain injury
- Vision impairments

Students should provide documentation to the DRC at their earliest convenience to allow for sufficient time for review. After the documentation has been reviewed, a disability specialist will contact the student regarding appropriate next steps. Visit the DRC website at: <http://www.northeastern.edu/drc/> for additional information or contact staff at 617.373.2675.

Attendance Requirements

The university expects students to meet attendance requirements in all courses to qualify for credit. Attendance requirements vary; it is the student's responsibility to ascertain what each instructor requires. Failure to meet attendance requirements may force a student to drop the applicable courses. Classes for day students are normally scheduled from 8:00 a.m. to 5:40 p.m., Monday through Friday. Students should not make conflicting commitments until the class schedules for each semester are final. Permission to make up work may be granted by instructors for reasonable cause. Requests must be made immediately upon a student's return to class. Laboratory work can be made up only during the hours of regularly scheduled instruction.

Absence Because of University-Sponsored Activities

Participation in university-sponsored activities, where the students are representing their university, college, or department, may cause absences from class that qualify as excused absences. Excused absences, with appropriate prior arrangement, are not subject to penalty, and missed work may be satisfied through agreement between the student and the instructor. University-sponsored activities that may justify excused absences include athletic competition, performing arts events, and research or other presentations.

Students must discuss absence(s) with instructors at least two weeks in advance of the university-sponsored activity, or as soon as possible if the activity is at the beginning of the term or is the result of an unforeseen circumstance. Instructors may require a written statement from the administrator in charge of the activity. Instructors are expected to make reasonable accommodations for these class absences including administration of makeup assignments and exams whenever possible. It is expected that students seeking an excused absence will develop a plan and timetable to make up the missed course work with their instructor(s). Note, however, that the requirements of some courses or programs may preclude such accommodations.

Absence Because of Religious Beliefs

Any student who is unable, because of his or her religious beliefs, to attend classes or to participate in any examination, study, or work requirement should be provided with an opportunity to make up such examination, study, or work requirement that he or she may have missed because of such absence on any particular day, provided that such makeup examination or work does not create an unreasonable burden upon the university. Students should make appropriate arrangements with the instructor in advance of the absence, preferably at least two weeks before the religious observance.

Absence Because of Jury Duty

Members of the university community are expected to fulfill their obligations to serve on a jury if called upon. A student selected for jury duty should inform his or her instructors. They will provide a reasonable substitute or compensatory opportunities for any required work missed. A student with such an absence will not be penalized in any way.

Absence Because of Military Deployment

See “Leave of Absence Due to Military Deployment (p.).”

Other Absences

Unforeseen events or circumstances, including illness, accident, catastrophic event such as fire, and bereavement, may cause a student to be absent from class. If such events occur, students should notify their academic advisor and instructors as soon as possible to apprise them of the circumstances leading to their absence, as well as how much time will be missed. Students should work with their instructors to develop a plan, with a timetable, to make up missed course work. Students may be asked to provide documentation that the class absence is warranted. Faculty and students should note that the University Health and Counseling Service does not provide sick notes or medical excuses except for long-term illness. One approach to documentation of short-term illness is that students themselves draft and sign absence notes to be provided to their instructors upon their return to class, with integrity in this process an expectation of the Northeastern Academic Integrity Policy. Instructors are expected to make reasonable accommodations for warranted class absences, including administration of makeup assignments and exams, whenever possible.

Extended Absences

A student who is absent from school for an extended period of time must inform his or her academic advisor by letter, email, or telephone. The expected length of the absence may determine whether the student should apply for a medical or emergency leave of absence (p.). It is strongly recommended that the student contact his or her academic advisor to discuss potential next steps, which could include incomplete grades; withdrawal from classes; or, in the event of an extended absence due to a chronic medical condition or disability, consultation with the Disability Resource Center to explore potential accommodation.

Student Evaluation of Courses (TRACE)

Students play a critical role in the university's commitment to quality teaching and academic excellence when they participate in the evaluation of courses through TRACE (Teacher Rating And Course Evaluation), a survey developed collaboratively by the Student Government Association and the Faculty Senate. TRACE data are important in the process of course design and improvement, as well as in the process of faculty evaluation. Students are expected to participate in TRACE with constructive feedback that is relevant to teaching and course content. TRACE results from previous terms can be found on the myNortheastern web portal (<http://www.myneu.neu.edu>).

Registration and Taking Courses

Students are expected to register for classes during the published registration times in the academic calendar. Freshmen may be preregistered for some or all of the courses they need. Most registration after the freshman year is accomplished through the myNortheastern web portal (<http://www.myneu.neu.edu>). Students must complete “I Am

Here” registration just prior to the start of classes to remain enrolled. Class adds must be registered by the end of the seventh class day.

Course Numbering System

Every semester course number at Northeastern University consists of two parts:

- A two- or four-letter subject code
- A four-digit number

For example, in the course number Principles of Macroeconomics (ECON 1115), ECON is the subject code, and 1115 is the four-digit number.

The four-digit number indicates the level of the course as indicated below.

UNDERGRADUATE

0001–0999	Orientation and basic No degree credit
1000–1999	Introductory level (first year) Survey, foundation, and introductory courses, normally with no prerequisites and designed primarily for students with no prior background
2000–2999	Intermediate level (sophomore/ junior year) Normally designed for sophomores and above, but in some cases open to freshman majors in the department
3000–3999	Upper intermediate level (junior year) Designed primarily as courses for juniors; prerequisites are normally required, and these courses are prerequisites for advanced courses
4000–4999	Advanced level (senior year) Designed primarily for juniors and seniors; also includes specialized courses such as research, capstone, and thesis

GRADUATE

0001–0999	Orientation and basic No degree credit
5000–5999	First-level graduate Courses primarily for graduate students and qualified undergraduate students with permission
6000–6999	Second-level graduate Generally for master's and clinical doctorate only
7000–7999	Third-level graduate Master's- and doctoral-level courses; includes master's thesis
8000–8999	Clinical/research/readings

9000–9999	Includes comprehensive exam preparation Doctoral research and dissertation
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Class Schedule

All classes start promptly according to the class schedule shown. Most classes at Northeastern are scheduled in the time periods listed.

Students are expected to be punctual. Students who are late for classes should attend for the balance of the class period. Instructors will not tolerate habitual tardiness.

Students may leave 15 minutes past the scheduled opening of class if the instructor is not present. In such cases, students should notify the department in which the course is offered that the instructor was not present.

Any change of regularly scheduled classes or examinations must have the unanimous consent of the students involved unless other mutually acceptable arrangements for students to attend the alternative class or examination are worked out between the faculty member and the student(s) involved. Final Exams must be held during the final exam time period and may not be negotiated in accordance with the official policy..

During the terms when they are teaching, faculty members are expected to provide sufficient conference time to meet the instructional and advising needs of their students.

Fall and Spring Schedule

Sequence 1	MWTh	8:00–9:05
Sequence 2	MWTh	9:15–10:20
Sequence 3	MWTh	10:30–11:35
Sequence 4	MWTh	1:35–2:40
Sequence 5	MWTh	4:35–5:40
Sequence 6	TuThF	11:45–12:50
Sequence 7	TuWF	3:25–4:30
Sequence A	MTh	11:45–1:25
Sequence B	MW	2:50–4:30
Sequence C	TuF	8:00–9:40
Sequence D	TuF	9:50–11:30
Sequence E	WF	11:45–1:25
Sequence F	TuF	1:35–3:15
Sequence G	TuF	3:25–5:05
Sequence H	Tu	11:45–1:25
	and Th	2:50–4:30
Sequence L	MWTh	8:00–11:35
Sequence M	MWTh	11:45–2:40
Sequence N	MWTh	2:50–5:40
Sequence P	MWTh	8:00–10:20
Sequence Q	MWTh	10:30–1:25
Sequence R	MWTh	1:35–5:40
Sequence S	MWTh	1:35–4:30
Sequence T	TuF	8:00–11:30
Sequence U	TuF	11:45–3:15
Sequence V	TuF	3:25–5:25
Sequence W	TuF	1:35–5:05

Summer Schedule

Sequence 1	MTuWTh	8:00–9:40
Sequence 2	MTuWTh	9:50–11:30
Sequence 3	MTuWTh	1:30–3:10
Sequence 4	MTuWTh	3:20–5:00
Sequence 5	MTuWTh	11:40–1:20
Sequence A	MW	8:00–11:30
Sequence B	MW	1:30–5:00
Sequence C	TuTh	8:00–11:30
Sequence D	TuTh	1:30–5:00

Course Syllabus

Faculty members are expected to distribute a syllabus at the start of each course. The syllabus should also be placed on the course Blackboard site. The syllabus should include a schedule of topics, exam and assignment due dates, information on how to contact the faculty member, process for conference time, grading and attendance policies, and a reminder of the university's academic integrity policy.

Course Prerequisites

Students are expected to meet prerequisites as listed in the course description of each course in which they enroll. Grades of F, U, I, or W in prerequisite courses do not normally fulfill requirements. Exceptions must be authorized by the instructor teaching the course.

Overload Policy

An overload occurs when a student is enrolled in more courses than prescribed by the program's curriculum. To register for an overload, students are advised to consult their academic advisor. Students who enroll in overload courses will be billed at the per-credit-hour rate, 1/16th of the full-semester tuition for that semester per semester hour. Undergraduate full-time day students may register for an additional music ensemble course from the list of courses without added charge as long as they are registered for a full course load.

Reduced Load Policies

Undergraduate full-time student adjustments for reduced loads are made only when the Undergraduate Petition to Reduce Load is approved by the academic advisor and by the Office of the Registrar. Adjustments will then be made if the course load falls below 12 semester hours during full semesters and 6 semester hours during summer half semesters (calculated at the per-credit-hour rate). To receive an adjustment, the Undergraduate Petition to Reduce Load must be submitted prior to the start of the term.

No rebate or credit is granted when a student voluntarily drops a course. A reduced load may impact the student's housing, financial aid, visa status, and health insurance. Students should consult applicable departments before committing to a reduced load. Students who take a reduced load will be billed at the per-credit-hour rate, 1/16th of the full-semester tuition for that semester per semester hour.

International students must speak with an advisor at the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) prior to dropping a course. Permission to drop below full-time status is restricted according to federal regulations.

Audit Policy

Full-time Northeastern students (16 credits at the undergraduate level and 8 credits at the graduate level, before the audit registration) may audit one class per term as an overload with no additional charge. Students are permitted to register from the end of the course-add

period to the end of the third week of classes. Registration is based on the availability of a seat in the class. Students must obtain advisor approval and meet the prerequisites and any other required approvals for the class. Instructor permission as well as approval by the associate dean of the college offering the course is required. The course work required is at the discretion of the instructor. Once a student opts to audit a course, the audit status of the course cannot be changed. First-year students may not audit classes. A signed Petition to Audit (<http://www.northeastern.edu/registrar/form-petition-to-audit.pdf>) must be presented to the Office of the Registrar during the designated audit-add period. Excluded courses are co-op, labs, language courses, any off-campus course, any online course, and any course required for the major or degree. Audits carry no academic credit.

Taking a Course while on Co-op or on Summer Vacation

Students who wish to take a course while on co-op or on summer vacation must complete an appropriate form in their college academic student services office before the term begins. Students on co-op should complete the petition registration form, and students on summer vacation should complete the summer-only petition registration form. Students who do not file the appropriate form will be dropped from their preregistered courses. Students who take a course while on co-op will be billed the overload tuition rate. Students who take a course while on summer vacation will be billed at the underload tuition rate. (See "Overload Policy" and "Reduced Load Policies" above.)

Transfer Credits for Current Students

Once they matriculate, students are expected to complete all course work for their degree at Northeastern; or an entity in a formal contractual, consortial, or partnership relationship with Northeastern; or at an approved study-abroad program. In some cases, in order to clear a deficiency, to permit students access to courses deemed by their respective advisors and colleges to be important for their education but unavailable to them at Northeastern, or to remain on track for graduation, a student may petition their college for permission to take a course at another accredited institution.

With the approval of the college academic advisor and the graduate school offering the courses, students may take courses in Northeastern's graduate schools.

Students who wish to take courses at another institution and transfer the credit to Northeastern must obtain *prior* approval from the college academic advisor. The Office of the Registrar validates accredited institutions to ensure credit transferability. The student must earn a C (2.000) or better for a course to be considered for transfer. Students are responsible for providing documentation on the institution's accreditation, course grading, and course descriptions prior to approval.

Special Students

Students who are not enrolled at Northeastern University may petition the college academic advising office to take courses on a semester-by-semester basis. Approval is based on the student's academic qualifications and on the availability of class space. The maximum cumulative credit hours for which a special student may register is 20 (not including related labs). Tuition is billed at the undergraduate per-credit-hour rate. If the college academic advising office approves the course enrollment, the student pays the bill and then returns the completed forms to the Office of the Registrar.

Dropping Courses

Not attending class does not constitute withdrawal. Students receiving a grade of W or NE in any course are responsible for the costs associated

with that course. Students must drop courses using processes described below:

IN FALL AND SPRING SEMESTERS

- Through the third week of the semester, students may withdraw without any grade being posted to the transcript. Courses may be dropped via the myNortheastern web portal (<http://www.myneu.neu.edu>).
- Between the fourth week and the last day of classes, course withdrawals are indicated by a W on the student's record. Courses may be dropped via the myNortheastern web portal (<http://www.myneu.neu.edu>). No financial adjustment is made for courses receiving a W grade.
- After the last day of classes, no withdrawals are accepted for any reason. A letter grade for the course will be posted on the transcript.
- Dropping below full-time enrollment (12 semester hours for fall and spring semesters) may affect financial aid, health insurance eligibility, and the maintenance of proper nonimmigrant visa status.

IN SUMMER HALF SEMESTERS

- Through the second week of the half semester, students may withdraw without any grade being posted to the transcript. Courses may be dropped via the myNortheastern web portal (<http://www.myneu.neu.edu>).
- Between the third week and the last day of classes, course withdrawals are indicated by a W on the student's record. Courses may be dropped via the myNortheastern web portal (<http://www.myneu.neu.edu>). No financial adjustment is made for courses receiving a W grade.
- After the last day of classes, no withdrawals are accepted for any reason. A letter grade for the course will be posted on the transcript.
- Dropping below full-time enrollment (8 semester hours for summer half semesters) may affect financial aid.

Late Admission to a Course

Students may petition to register for a course after the normal "class add" period, seven class days. Permission may be granted if seats are available and at the discretion of the instructor. If students are not already registered for a full course load, late admissions may jeopardize full-time status.

The Late Course Registration form (<http://www.northeastern.edu/registrar/form-late-reg.pdf>) is available online.

Final Examinations and Related Policies on Other Exams and Final Term Papers/Projects

- Final examinations are normally two hours in length and must be held when and where scheduled. Final exams are held during a designated final exam period at the end of the semester. An examination schedule is posted at the beginning of each semester at the final-exam schedule webpage (<http://www.northeastern.edu/registrar/finexsched.html>).
- Students are responsible for knowing the time and location of their examinations. Final exam schedules are available to students online via the myNortheastern web portal (<http://www.myneu.neu.edu>) under "My Schedule" in the "Self-Service" tab approximately the fourth week of the term.
- Students who have two examinations scheduled at the same time or three exams on the same day may complete and submit the Final Exam Conflict form (<http://www.northeastern.edu/registrar/form-finex-conflict.pdf>) by the posted deadline.

- Instructors may not give more than 30 total minutes of examinations during the eight calendar days prior to the start of the final exam period.
- Students who have concerns about exams scheduled during the eight calendar days prior to the start of the final exam period, rescheduling of final examinations, or conduct during an examination should report their concerns to their college academic student services office.
- All final examinations, term papers, or projects must be returned to the student or be retained by the department for a period of one year.

Course Credit Guidelines

Course credit hours (semester hours) are assigned to a course based on the established national educational standard that one credit hour is equal to approximately three hours of student learning time per week over a period of a semester. The Office of the Registrar, 271 Huntington Avenue, maintains the official record for all courses. In the event of error in any publication, the academic record will reflect the correct semester hours applicable to any degree requirement.

On occasion, course titles change, while the course number remains the same. Despite such title changes, the course is still considered to be the same course. Students who have taken the course under the old title and then take the course again under the new title are considered to have repeated the course.

Grading System

Grades are officially recorded by letters, evaluated as follows.

Letter Grade	Numerical Equivalent	Explanation
A	4.000	Outstanding achievement
A–	3.667	
B+	3.333	
B	3.000	Good achievement
B–	2.667	
C+	2.333	
C	2.000	Satisfactory achievement
C–	1.667	
D+	1.333	
D	1.000	Poor achievement
D–	0.667	
F	0.000	Failure
I		Incomplete
IP		In progress
NE		Not enrolled
NG		Grade not reported by faculty
S		Satisfactory (pass/fail basis; counts toward total degree requirements)
U		Unsatisfactory (pass/fail basis)
X		Incomplete (pass/fail basis)

L	Audit (no credit given)
T	Transfer
W	Course withdrawal

An I, IP, or X grade shows that the student has not completed the course requirements.

The IP grade is intended for courses that extend over several semesters. The time restrictions on the incomplete grade do not apply to the IP grade. While the IP grade is left unchanged, it is not included in computing the grade-point average. If the IP grade is never changed, the course does not count toward graduation requirements.

Pass/Fail System

The individual schools and colleges state how and when the pass/fail system may be used. An outline of the general system follows.

- Any student not on academic probation may register for one pass/fail course per semester if permission is granted by the college in which the student is enrolled and if the course is offered on a pass/fail basis.
- Pass/fail courses are normally restricted to electives outside the major, minor, or NUpath requirements. The college faculty, however, may choose to adopt the pass/fail system of grading when it appears pedagogically sound for required courses within a major or minor.
- Before requesting a pass/fail grade from an instructor, students should meet with their academic advisor to determine whether doing so will disqualify the course from satisfying a program requirement or elective. In general, courses taken on a pass/fail basis can be used only to satisfy open electives.
- Individual faculty members may decide whether any of their courses may be taken on the pass/fail system of grading, except when uniformity is necessary. In such cases, the department and/or college faculty offering the course determine whether the pass/fail system is used.
- Grades recorded on the basis of the pass/fail system do not figure in the computation of the grade-point average. Satisfactory completion of all courses taken on the pass/fail system is designated on the student's permanent record by the letter S. Unsatisfactory work is designated by the letter U. Any unsatisfactory grade must be handled according to the existing policy of the college but must never be cleared through the election of the same course pass/fail, except when this system is the only one used by the college for grading the course.
- To use the pass/fail system, students must meet all prerequisites for the course and declare by the end of the second week of the semester their intention to receive a pass/fail grade. This deadline may be extended to the end of the eighth week of a full semester or the end of the fifth week of summer half semester at the option of the instructor.
- Students must submit a Petition to Elect Pass/Fail Grade (<http://www.northeastern.edu/registrar/form-passfail.pdf>), signed by the faculty member.

Clearing an Incomplete or Changing Other Grades

The period for clearing an incomplete grade or for changing a grade other than an incomplete or failure (F or U) is restricted to one calendar year from the date it is first recorded on the student's permanent record. An incomplete grade may be reported by the instructor when a student has failed to complete a major component of a required course, such as homework, a quiz or final examination, a term paper, or a laboratory project. Students may make up an incomplete grade by satisfying the

requirements of the instructor or, if the instructor is absent, the chair of the department. Be aware that instructors' policies on the granting of incomplete grades may vary and that the final decision on an incomplete grade is up to the instructor.

Freshmen with multiple course deficiencies, including incomplete grades, may be required by their college academic advisor to rectify the deficiencies within a period of time less than the normal year.

To request an incomplete grade, the student must obtain and complete in consultation with the instructor an Incomplete-Grade Contract (<http://www.northeastern.edu/registrar/form-inc-grade.pdf>) on which the precise agreement for clearing an incomplete grade is specified and which is signed by the student and the instructor. Copies of the form are kept by the student, the instructor, and the Office of the Dean of the college in which the course is offered. Any exception to this policy on change of grades must be recommended by the Academic Standing Committee (ASC) of the college in which the course was offered and must be forwarded in writing by the ASC to the registrar for implementation. (Finishing the agreed-upon course work must be completed within one calendar year from the end of the semester in which the course was offered.)

University policy states that any grade outstanding for twelve or more months cannot be changed. Any exception to this policy on change of grades must be recommended by the ASC of the college in which the course was offered and must be forwarded in writing by the dean to the Office of the Registrar for implementation.

Repeating Courses

When the appropriate course is available, students may repeat a course to earn a better grade. In all cases, the most recent grade earned in a course is the one used in calculating the overall grade-point average; however, previous grades remain on the transcript followed by the word "Repeat." Consult your academic advisor before repeating a course. Students are required to pay normal tuition for all repeated course work.

Substituting Courses

In some cases, it may not be possible to repeat a course if a student wishes to do so. In unusual circumstances, students may petition to substitute one course for another they have already taken, as long as the subject matter of both courses is substantially alike. With the approval of the student's academic advisor and the agreement of the department that offered the first course taken, a grade received in the new course will be labeled "Substitute" on the transcript and will be treated in the grade-point average calculation as a "repeat" grade, as described above. The original grade will remain on the student's Northeastern transcript. Students should consult with their academic advisor before enrolling in any proposed substitute course. Students are required to pay normal tuition charges for all substitute course work.

Clearing an Academic Deficiency

An academic deficiency occurs when a student fails to complete a course with a satisfactory grade. The deficiency may occur because the student has failed the course or because the student has passed the course but with a grade that does not meet the minimum required by the student's program.

Students who have academic deficiencies may be required to clear them before progressing within the curriculum, especially if a given course is a prerequisite for future course work. Deficiencies may affect the student's expected year of graduation.

With the approval of the appropriate program faculty and/or academic advisor, students can clear deficiencies in the following ways:

1. Repeat the same course at one of Northeastern's colleges, which will result in a "repeat" grade (see "Repeating Courses" policy above).
2. Substitute a comparable course at one of Northeastern's colleges, which will result in a "repeat" grade (see "Substituting Courses" policy above).
3. Under special circumstances, a student may be advised to take a preapproved course at Northeastern's College of Professional Studies or at another institution outside Northeastern University. The original grade will remain on the student's Northeastern transcript and will still be used in the calculation of the grade-point average.

Appeal of Final Grades

Under certain circumstances, students have the right to appeal final grades given by either academic faculty or cooperative education coordinators. Criteria and procedures for such appeals can be found on p. 1 of the *Undergraduate Student Handbook* (<http://www.northeastern.edu/osccr/wp-content/uploads/2017/06/2017-18-UG-Student-Handbook.pdf>).

Grade-Point Average (GPA)

Numerical equivalents for scholastic averages are weighted according to the number of hours the course carries. For example, suppose a student receives a grade of B in a course carrying 4 semester hours and a grade of A in a course carrying 1 semester hour. The weightings for these example courses are as follows:

Grade	Numerical Equivalent	Semester Hours	Weight
B	3.000	4	12
A	4.000	1	4
Totals:		5	16

The GPA for both courses would then be the total weight (16) divided by the total semester hours (5), or 3.200. Grades of I, IP, S, U, and X are not included in the calculation of the GPA. See grade table (p. 29) for a complete list of grades and numerical equivalents.

Grade Reports

Grades are available to students approximately three days after the end of each semester via the myNortheastern web portal (<http://www.myneu.neu.edu>). A missing grade means that none was received from the instructor. Grades received late from faculty are processed as they are received.

Transcripts

Currently enrolled students may obtain unofficial transcripts from the myNortheastern web portal (<http://www.myneu.neu.edu>) and may also order official transcripts through myNortheastern. For further information on transcript requests, visit the transcript request webpage (http://www.northeastern.edu/registrar/trans_request.html). All questions concerning transcript requests should be directed to 617.373.2300, TTY 617.373.5360.

Academic Honors

Dean's List

A dean's list, or honors list, is issued at the end of each fall and spring semester. Effective fall 2010, the requirements to be on the dean's list are a 3.500 grade-point average (GPA) or higher with no incomplete grade or grade below C-. Students who are on any form of probation, who

are enrolled in a course on a pass/fail basis (except where there is no alternative or where required by the program), or who are not carrying a full load as determined by their undergraduate college are not eligible. With a few exceptions as approved by the respective colleges, a full load for fall and spring semesters is considered to be a minimum of four courses or 16 semester hours.

Graduation with Honors

Graduation with honors and selection as the class marshal are reserved for undergraduates who have completed 64 semester hours in residence and meet the following GPA requirements to graduate with honors:

GPA	Honor Conferred
3.500–3.699	Graduate with honor (cum laude)
3.700–3.849	Graduate with high honor (magna cum laude)
3.850–4.000	Graduate with highest honor (summa cum laude)

Note: The university reserves the right to change these standards.

University Honors Program Distinction

University Honors Program Distinction is earned by those students who have completed six honors courses, including an honors interdisciplinary seminar, and who have maintained a cumulative GPA of 3.500. The honors course requirement is adjusted for students who join the University Honors Program as second-semester first-year students (five honors courses) or as rising sophomores (four honors courses). Entering first-year students are invited to join based on a combination of their high school academic preparation, SAT/ACT scores, and leadership/civic engagement record. See the program's website (<http://www.northeastern.edu/honors>) for information about the guidelines on how continuing students may join.

Honors in the Discipline

Honors in the Discipline is earned by those students who successfully complete college-defined requirements, generally culminating in a junior/senior honors thesis or a junior/senior honors project. This distinction will appear on the transcript (for example, "Honors in Music" or "Honors in Chemistry"). Detailed information about Honors in the Discipline is provided under each college's website.

Academic Progression Standards

Faculty Advisor Communication Tool (FACT)

FACT warns students and their advisors of difficulty in courses. This warning is important for students' success, especially for students with a cluster of academic problems. Faculty members are expected to submit warnings by the fifth week of the semester, early enough for correction of the performance or for withdrawal from the course, if appropriate. FACT warnings and/or progress reports for student-athletes are necessary for NCAA compliance.

Academic Status

Academic progress of all students is reviewed by academic advisors at the end of each semester. Students are notified soon after final grades are posted if there are concerns about academic progress in any or all of the following areas:

1. Overall grade-point average (GPA)
2. Semester hours successfully completed

3. Failing or near-failing grades in courses that are required for progress in the major

Students at Northeastern maintain good academic standing when they meet the following criteria:

1. Have an overall GPA of 1.800 at the end of each semester of their freshman year and a minimum cumulative GPA of 2.000 at the end of each semester thereafter
2. Earn at least 12 semester hours in the semester just completed

Individual colleges may have additional requirements that are specified in each college section that follows.

In addition, many programs require that specific courses be successfully completed to progress to the next year. Students who do not make satisfactory progress will not graduate with their class and may be withdrawn. For more information about additional academic progression standards for each college, program, or major, refer to the curriculum guidelines that can be found in the college sections of this catalog. See financial aid implications under "Financial Aid (p. 19)."

Academic Probation

Full-time students who fail to meet the criteria for good standing described above will be placed on academic probation effective for the following semester. The action will appear on the internal record but not on the transcript.

Academic Dismissal

Students who remain on probation after two full-term academic semesters may be dismissed from the university. This action may appear on the transcript at the end of the second probationary semester. In addition, students who have below a 1.000 GPA or fewer than 4 earned semester hours in any semester or cumulatively may be dismissed at the discretion of their college. Students may appeal this decision to the Academic Standing Committee of their college (see following section). International students should consult with an advisor in the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) to discuss the impact of an academic dismissal as it relates to nonimmigrant visa status.

Academic Standing Appeals

Students may appeal academic standing status if they can provide evidence and/or reasons supporting an appeal. Generally, a student on probation may be granted no more than one additional full-term academic semester to meet the criteria for good academic standing. Students may appeal to the Academic Standing Committee of their college to review probation and dismissal cases.

Academic Eligibility for Participating in Student Organizations and Athletics

All students must have a minimum 2.000 overall GPA to be eligible for an elected or appointed leadership position in any student organization. Athletes must adhere to NCAA standards.

Repeating Courses to Clear Deficiencies

See "Repeating Courses (p. 30)" and "Clearing an Academic Deficiency (p. 30)."

Definition of Freshman, Sophomore, Junior, and Senior

For undergraduate day students, freshman, sophomore, junior, and senior standing are determined by earned semester hours:

Freshman	Less than 32 semester hours
Sophomore	At least 32 but less than 64 semester hours
Junior	At least 64 but less than 96 semester hours
Senior	At least 96 semester hours

Graduation Requirements

To be eligible to receive degrees, graduating seniors must meet all academic and residency requirements. They must also clear all financial, experiential education, and disciplinary deficiencies.

In addition, each program of study has specific academic requirements. These are specified for each program under the various schools and colleges in this catalog.

Once they matriculate, students are expected to complete all course work for their degree at Northeastern; or an entity in a formal contractual, consortial, or partnership relationship with Northeastern; or at an approved Northeastern University study-abroad program. In some cases, in order to clear a deficiency, to permit students access to courses deemed by their respective advisors and colleges to be important for their educations but unavailable to them at Northeastern, or to remain on track for graduation, a student may petition their college for permission to take a course at another accredited institution. See also "Residency Requirement," below.

Prior to completion of their program, students are expected to complete a graduation degree audit at their college's academic student services office.

Note: Participation in study abroad in a student's final semester may result in a delay in graduation due to calendar discrepancies across institutions.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Residency Requirement

In addition to meeting all degree and major requirements, students must earn a minimum of 64 Northeastern University semester hours to receive a bachelor's degree. Established exchange programs, where students are earning two degrees, one from Northeastern University and one from another institution, require students to earn a minimum number of Northeastern University semester hours as specified by the exchange program. Specialized programs for students with preexisting credentials have specific residency requirements.

Commencement

Attendance at Commencement is optional. Information concerning Commencement is provided to all graduating seniors during the spring semester. Seniors who have been removed from the graduation list are notified if they fail to qualify for their degrees. No special notice is sent to students who do qualify.

Degrees, Majors, and Minors

Declaring Majors and Minors

Undergraduate students may declare their majors upon admission to the university or may elect to join programs for undeclared students before declaring a major. Students must declare a major no later than the end of the sophomore year. Majors and concentrations are described under the various schools and colleges in this catalog.

Students should submit a petition form to earn a minor as early as possible and, generally, no later than the end of the junior year, by applying to the department offering the minor. Completion of the requirements of a major, minor, or concentration is noted on the transcript.

Changing Majors

Undergraduate students enrolled full-time in one or more of the university's undergraduate schools or colleges may change their major if they meet one of the following transfer criteria:

- The student meets the criteria for immediate entry as defined by the receiving major.
- The student has a cumulative grade-point average (GPA) of 2.000 or greater and satisfactorily completes the transition criteria as defined by the receiving major. For GPA below 2.000, change of major is at the discretion of the receiving major.

Students who are considering a major change must discuss their change in person with an advisor in the receiving major. See the online list of advising offices (<http://www.northeastern.edu/registrar/changemajor-offices.html>). The advisor will certify that the student meets the criteria for immediate entry to the major or will set up a transition term for the student to satisfy the change-of-major criteria. Advisors will discuss the student's ability to succeed in the desired program given the current academic record as well as the influence of changing major on the student's ability to obtain a degree in the desired program within the traditional eight-academic-term time frame.

Transition criteria are designed to help ensure that students who change major have a reasonable chance of academic success and program completion. A list of school and college transition criteria is maintained at the website of the respective school or college. Students wishing to join some majors must also audition or submit a portfolio, as indicated on the aforementioned webpage. Note also that some colleges have deadlines for applications to change major, also indicated on the aforementioned webpage.

International students must inform the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) of any change of major.

Northeastern Explore Program

The Northeastern Explore Program provides support and guidance to first-year students who have not yet decided upon or officially declared a major. All students must declare a major no later than the end of the sophomore year. Undeclared students are strongly encouraged to declare a major by the beginning of their sophomore year if they are interested in highly structured programs or in maximizing their number of co-op placements within such a major. Admission to a particular major is dependent on the transfer criteria described above.

The D'Amore-McKim School of Business, the College of Engineering, and the College of Computer and Information Science also each provide

resources to facilitate a major choice for students who enter their respective colleges with undeclared majors.

Double Major

Students may earn a double major by gaining admission to the second major and by completing all requirements for both majors. Because some double majors will have a significant overlap in courses, all double-major proposals must be approved by the home college of each major in the proposed double major. Students completing a double major receive one degree and one diploma. The two majors appear on the transcript. If the two majors are in different colleges, the degree is associated with the major in the home college.

Second Northeastern University Bachelor's Degree

To earn a second bachelor's degree after earning a first bachelor's degree from Northeastern, a student must be granted admission to the second program, enroll at Northeastern, and complete all requirements for the second major that are not already on the student's transcript. Outdated course work may not be accepted. Students must earn a minimum of 32 semester hours beyond those earned toward the first degree. A second diploma will be awarded and the second degree will be noted on the transcript.

Students must complete an application with the home college of the intended degree. Some programs may require prerequisites prior to admission. Students should apply by the normal transfer deadline to ensure timely consideration. The college makes the determination on admission; notifies the student of this decision; and, if the student is admitted, provides the student with a program of study and reactivates the student's record. International students must consult with an advisor in the Office of Global Services to request updated documentation reflecting engagement in the second Bachelor's Degree program.

Combined and Independent Majors

Students with academic interests not available in the context of existing majors, minors, and double majors may propose a combined or independent major. In these majors, students pursue in-depth study in areas that are supported and approved by the appropriate Northeastern faculty members.

COMBINED MAJORS

Combined majors include at least nine courses associated with each of two participating disciplines. There must be at least one course that acts as a bridge between the disciplines. No more than two courses may count for both disciplines, i.e., there must be at least 16 courses in the combined major. The combined major should be declared by the end of the first semester of the junior year. It is generally advantageous to declare the combined major as early as possible, especially when highly structured disciplinary components are involved. There are three categories of combined majors:

1. A number of defined combined majors currently exist where the curriculum is specific to each individual program; see the online list of current combined major program options (<http://www.northeastern.edu/registrar/major-2.html#defined>).
2. A number of disciplines have preapproved template programs that may be paired in a variety of combinations to yield combined majors; see the online list of current preapproved template programs (<http://www.northeastern.edu/registrar/major-2.html#templates>).
3. Disciplines will consider combined programs upon student request.

Currently Defined Combined Major

Students may request admission to a currently defined combined major by following the standard procedure for changing majors. A home college

is designated, in which the student will be registered and from which he or she will be graduated. Students completing a combined major receive one degree and one diploma. The combined major and home college will appear on the transcript and diploma.

Student-Requested Combined Major

Students may request admission to a new combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>) that requires approval by both disciplines/colleges together with an approved curriculum. The request may be for a combined major comprised of preapproved template programs or for a new combined major to be considered by the participating disciplines. During the planning process, advisors from both disciplines will be designated, and one will be identified as the primary advisor. If the two disciplines partnering in the combined major are in different colleges, a home college will be designated in which the student will be registered and from which he or she will be graduated. A meeting of the student and both advisors representing the two disciplines must be held to plan the combined-major curriculum and to consider NUPATH requirements. See the online list of discipline advisors and college contacts for new student-requested combined majors (<http://www.northeastern.edu/registrar/contacts-stu-req-combined.html>).

Students completing a combined major receive one degree and one diploma. The combined major and home college will appear on the transcript and diploma. When the two components of the combined major individually offer different degree designations, the degree designation that will appear on the transcript and diploma will be designated during the approval process.

INDEPENDENT MAJORS

In the rare cases when students have academic interests that fall within the expertise of Northeastern faculty members and that are not available in the large number of existing majors, minors, and combined majors, they may propose an independent major. Independent majors form an integrated program focusing on some issue, theme, or subject area not available within the context of existing curricula. These programs should be equivalent in depth and coherence to existing majors and may involve an integrative project. No student with less than a 3.250 grade-point average will be approved for an independent major. The proposal must be approved by the end of the first semester of the junior year. Proposals will not be considered before the end of the freshman year. For initial information and advice, interested students should consult the associate dean overseeing undergraduate studies in their current home college or the college most relevant to the proposed course of study.

The student assumes the initiative in formulating an independent major. High degrees of student initiative and self-reliance are also necessary for completion of this type of major. The student is responsible for securing the advice and approval of faculty mentors, at least one from each of the disciplines. These faculty mentors will help the student design the curriculum. The faculty mentors will guide the student's academic progress through the major. The student should select one of the faculty mentors as the primary mentor.

If the disciplines partnering in the independent major are in different colleges, the college of the primary mentor will be designated as the home college, in which the student will be registered and from which he or she will be graduated. Students completing an independent major receive one degree and one diploma. The independent major and home college will appear on the transcript and diploma. When the components of the independent major individually offer different degree designations, the degree designation that will appear on the transcript and diploma will be designated during the approval process.

The student, with the assistance of the faculty mentors, must formulate in writing and submit to the home college curriculum committee an Independent Major Approval form (<http://www.northeastern.edu/registrar/form-maj-ind.pdf>) bearing the signatures of all faculty mentors and a proposal containing the following items:

- A statement of the central concept around which the independent major is organized and a rationale for the major, including a discussion of why existing programs are inadequate to the student's purpose and how the proposed major meets the student's educational, professional, or personal goals
- A list of courses—including names, numbers, prerequisites, and frequency of offering (if known)—and a breakdown of the introductory, intermediate, and advanced courses included in this list
- A statement of the manner in which the requirements of the university core are fulfilled (and, if applicable, BA core requirements (p. 40))
- A list of courses—including numbers, names, and grades—already taken that will apply to the major or to the university core (and BA core, if applicable) requirements
- A student transcript
- A calendar for completion of the degree

A meeting of all faculty mentors and the student must be held before college approval of the major program. In accepting the proposal, the home college dean's office certifies that the rules established for the independent major have been followed, and it assumes administrative responsibility by assigning an academic advisor to monitor the student's progress and clear the student for graduation. Any changes in the curriculum must be approved by the primary faculty mentor, and the home college advisor must be informed.

PlusOne Bachelor's/Master's Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See additional information on PlusOne Bachelor's/Master's programs (<http://www.northeastern.edu/plusone>).

Northeastern University School of Law also admits students from a small number of programs in the College of Social Sciences and Humanities to a 3+3 program that allows students to count their first year of law school toward their undergraduate degree.

Minors

Minors offer an opportunity for students to complement their major with intensive study in another area. A minor consists of a minimum of four courses defined by a department or an interdisciplinary program. In some cases, background courses are also required. Unless otherwise indicated, minors are generally open to all university students. Minors appear on the transcript only after completion of requirements has been certified and the degree has been awarded.

Personal Information

Change of Name

Report all name changes to the Office of the Registrar immediately. This is especially important when students marry and wish to use a new name on university records.

Change of Address

Report all address changes via the myNEU web portal (<http://www.myneu.neu.edu>) or in person at the Office of the Registrar or Office of Student Accounts. Both the permanent home address and the local address are required. International students must report any changes of address within ten days in order to ensure compliance with Student and Exchange Visitor Information System (SEVIS) requirements.

Family Educational Rights and Privacy Act (FERPA)

FERPA for Students—General Information

FERPA is a federal law that applies to educational institutions. Under FERPA, schools must allow students who are 18 years or over or attending a postsecondary institution:

- Access to their education records
- An opportunity to seek to have the records amended (see the *Student Handbook* for this procedure)
- Some control over the disclosure of information from the records

FERPA General Guidance for Parental Disclosure

When a student turns 18 years of age or attends a postsecondary institution, the student, and not the parent, may access, seek to amend, and consent to disclosures of his or her education records.

If you are an undergraduate day student and you choose not to share information with your parents, Northeastern will, if asked, indicate that you have restricted access to your records.

Release of Directory Information

The primary purpose of directory information is to allow Northeastern University to confirm attendance for employers, health insurance companies, and loan agencies. Northeastern may disclose appropriately designated "directory information" without written consent, unless you have advised the university to the contrary in accordance with the procedures below. If you choose not to release directory information, all communications with all third parties and agencies will need to be done through your written request to the university or in person.

As of June 30, 2016, Northeastern directory information includes:

- Student name
- Home address (city, state, country only)
- Major field of study
- College
- Class year
- Enrollment status (e.g., undergraduate or graduate, full-time or part-time)
- Dates of attendance
- Degrees, honors, and awards received
- Most recent educational agency or institution attended
- Sports activity participation, showing weight/height of members of athletic teams
- Participation in officially recognized activities

If Northeastern currently has permission to release data and you do not want the university to disclose directory information without your prior written consent, you must notify the university by coming to the Office of the Registrar, 271 Huntington Avenue.

Notification of Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights are:

1. The right to inspect and review the student's education records within 45 days of the day the university receives a request for access. Students should submit to the registrar, dean, or head of the academic department (or appropriate official) written requests that identify the record(s) they wish to inspect. The university official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the university official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education record that the student believes is inaccurate or misleading. Students may ask the university to amend a record that they believe is inaccurate or misleading. They should write the university official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the university decides not to amend the record as requested by the student, the university will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interest. A school official is defined as a person employed by the university in an administrative, supervisory, academic, or support staff position (including law enforcement unit and health staff); a person or company with whom the university has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a person assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the university to comply with the requirements of FERPA. At Northeastern, the Office of the University Registrar, 271 Huntington Avenue, administers FERPA.

Additional Information

Additional information can be obtained at the U.S. Department of Education's website (<http://www.ed.gov/policy/gen/guid/fpco/ferpa>) or by writing to:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920

Student Right-to-Know Act

See online information about the Student Right-to-Know Act (<http://www.northeastern.edu/registrar/right-to-know.html>).

Leaves of Absence and University Withdrawal

General Leave of Absence Policy

Students who wish to take a leave of absence are encouraged to apply for the leave by filling out the proper petition through the myNortheastern web portal before the last day to drop without a W in a term. Students can request a leave up until the last day to drop with a W in a term, but should review the financial implications of withdrawing from courses on the Student Financial Services website. Students can take up to one year of leave, excluding medical and emergency leaves of absence. Any leave of absence type, if approved, will take into account the following conditions:

- Students who do not return at the end of the leave will be withdrawn and must contact their college for re-entry prior to the term start.
- Students must return to classes, not co-op.
- Students must be currently enrolled in academic classes or co-op. If a student is withdrawn for personal reasons, the withdrawal can be reversed and a request for a leave of absence can only be processed if it is before the last day to drop without a W in a term. If the student has been administratively withdrawn, a request for leave of absence cannot be considered until the withdrawal is resolved.
- Students who receive financial aid should meet with a financial aid counselor before going on a leave.
- Students in university housing should refer to the Housing and Residential Life Office for policy information.
- A Student's enrollment status cannot include more than one academic year of consecutive non-class enrollments. Students on leave for more than one year will be withdrawn from the university.
- If a student has taken multiple leaves equating to one year, the next leave request will be processed as a withdrawal.
- International students must make an appointment with the Office of Global Services (OGS) (<http://catalog.northeastern.edu/professional-studies/academic-policies-procedures/absence-withdrawal/#military>) to discuss leave of absence procedures in accordance with federal regulations.

Students on a leave of absence are considered active students and are able to register for classes in an upcoming term in a leave status. If a student is unable to register because they are inactive, they should contact their college for re-entry at the time of registration for the return term. Students are expected to register for classes upon returning from a leave of absence.

Medical or Emergency Leave of Absence

Medical leave is an option available to those Northeastern students who develop a major medical condition that precludes class attendance, completion of requirements, and/or participation in co-op. Medical leave petitions must be initiated at University Health and Counseling Services (UHCS). Students are not allowed to take classes for credit toward their degree at Northeastern while on a medical leave of absence. Students can petition their college for an exception to take classes elsewhere while on a medical leave of absence based on extenuating circumstances.

Students who wish to re-enter the university following a medical leave must contact UHCS. Re-entry from a medical leave requires receipt of all documentation delivered to UHCS on or around one month prior to the planned re-entry to classes. Once all documentation is received by UHCS, it will be reviewed and the student will be notified of the decision. Students must be enrolled in Northeastern University classes for the term in which they wish to return from their medical leave of absence.

More specific information about the re-entry process, along with the application for leave, can be found at the UHCS website (<http://www.northeastern.edu/uwcs/access-to-care>).

Emergency leaves may be granted when a student cannot continue attending class after the start of the term due to life-changing situations beyond the student's control. Students can access the application and submit their request for an Emergency Leave of Absence online by going to the myNortheastern web portal (<http://www.myneu.northeastern.edu>), and typing "Registrar Forms" in the search box, choosing Leave of Absence, and then selecting Emergency as the leave type.

The university's medical leave of absence and emergency leave policy states that all *tuition* charged for the term in which the leave has been granted will be held by the university and applied toward future tuition charges in the same academic program. This does not include housing and other fees. Outstanding balances (including unpaid balances) for the academic term in which the leave is taken are still due the university. Tuition adjustments are made depending on the timing of the leave. The adjustments would follow the same schedule as the official withdrawal adjustments. See the schedule for "Refunds for Complete Withdrawal from the University (<http://catalog.northeastern.edu/undergraduate/expenses/bill-payment/#comp-with>)." Financial aid recipients must contact their financial aid counselor to understand the effects on aid received.

If the leave extends more than six months, student loans may go into repayment. Students enrolled in the Northeastern University Student Health Plan (NUSHP) will remain enrolled in the plan for the plan year, ending August 31.

Returning from a Leave Of Absence

Students on a leave of absence are considered active students and are able to register for classes in an upcoming term in a leave status. If a student is unable to register because they are inactive, they should contact their college for re-entry at the time of registration for the return term. Students are expected to register for classes upon returning from a leave of absence.

Students who are withdrawn and are applying for Commencement may be re-entered on a leave of absence, pending the college's approval, prior to the term in which they will graduate. International students returning from a leave of absence should contact OGS regarding the Student and Exchange Visitor Information System (SEVIS) procedures three to four months prior to anticipated return date.

Students who wish to re-enter the university following a medical leave must contact the Medical Leave Team at UHCS. Re-entry from a medical leave requires receipt of all documentation delivered to UHCS on or around one month prior to the planned re-entry to classes. Once all documentation is received by the Medical Leave Team, it will be reviewed and the student will be notified of the decision. Students must attend classes for the term they wish to return from medical leave of absence.

Leave of Absence Due to Military Deployment or Missionary Service

When a student is called to active duty or missionary service, they must apply for the leave by filling out the proper petition through the myNortheastern web portal (<http://myneu.northeastern.edu>). Proof of official deployment or call to service paperwork will be required as an attachment when filling out the leave of absence request.

When a student is called during the term, the university will:

- Excuse tuition for that term. Any payment made will be credited to the student's account.
- Post a leave of absence for the term to hold a place for the student when he or she returns.

If a student is called near the end of the term, the student and faculty members may determine that incomplete (I) grades are more appropriate. In this case, tuition will not be waived.

When a student returns to the university after completion, he or she will notify the college academic student services office if the leave was longer than one year, which will in turn notify the Registrar's Office. The college academic student services office will assist the student with re-entry and registration. If the leave was less than one year, the student should register for classes for the upcoming term prior to returning to campus.

International students who must take a leave of absence to engage in military service in their home country must additionally fill out a form for leave of absence with OGS.

Leave of Absence for International Students

International students should discuss maintenance of proper U.S. immigration status with an advisor at OGS before requesting any type of leave of absence.

University Withdrawal

Students seeking to withdraw from the university for any reason should meet with their academic advisor before completing the university withdrawal form online. Students should review the financial implications of withdrawing from all classes on the Student Financial Services website.

Students may be withdrawn from the university for financial, disciplinary, academic, or medical reasons. In the last case, the vice president for student affairs will review the recommendations of the director of health services to determine whether the student should withdraw. Withdrawals are made only when it is determined that the student is a danger to himself or herself or to other members of the university community, or when the student has demonstrated behavior detrimental to the educational mission of the university.

Note that withdrawal from the university will impact an international student's immigration status. Thus, international students should discuss the means to maintain proper U.S. nonimmigrant status with an advisor at OGS before requesting or after having been placed on withdrawal.

University Academics

- NUpath (p. 37)
- University-Wide Requirements (p. 41)
- Living and Learning Communities (p. 41)
- Experiential Learning (p. 41)
- Cooperative Education (p. 41)
- Research and Creative Activity (p. 42)
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NUpath

Learning, Knowing, Doing, Leading

NUpath is Northeastern University's set of institution-wide general education requirements for all students in all majors. The goal of the NUpath is to develop in our students the knowledge and skills to be lifelong learners with success in many careers, to be thoughtful global citizens, and to be fulfilled human beings. It offers students the flexibility to integrate general education learning into their individual educational journeys while maintaining the rigor of high standards through defined learning outcomes, making NUpath a unique tool for personalized curricular enrichment. NUpath is competency based rather than course based. It is built around essential, broad-based knowledge and skills—such as understanding societies and analyzing data—integrated with specific content areas and disciplines.

NUpath requirements are met throughout a student's program of study. NUpath requirements are not restricted to specific colleges or departments and can be fulfilled through major, minor, or concentration requirements as well as through general electives. NUpath courses may not be taken pass/fail. NUpath is required for all freshmen who entered in fall 2016 and later. It does not apply to students already admitted with a different set of core requirements or to transfer students whose entry year was earlier than the fall of 2016.

- Requirements (p. 37)
- Learning Goals (p. 38)
- Writing-Intensive Courses (p. 40)
- Additional Requirements for BA Students (p. 40)

NUpath Requirements

NUpath requirements are a set of eleven competencies designed to prepare students for personal success in an ever-evolving global society regardless of their chosen field of study. NUpath requirements are as follows:

- Natural and Designed World
- Creative Expression and Innovation
- Interpreting Culture
- Formal and Quantitative Reasoning
- Societies and Institutions
- Analyzing and Using Data
- Differences and Diversity
- Ethical Reasoning
- Writing across Audiences and Genres
- Integrating Knowledge and Skills through Experience
- Demonstrating Thought and Action in a Capstone

Because NUpath is competency based rather than course based, students have many options of courses to fulfill the requirements. Students can use the Dashboard tool (<http://www.neu.edu/registrar/db-ugd.html>) to find courses both in and beyond their major requirements that satisfy NUpath. Courses that meet major, minor, or concentration requirements can also meet NUpath requirements. There are no level restrictions or semester-hour restrictions. No course taken as pass/fail can be used to satisfy a NUpath requirement. A single course can count for up to two of the following requirements:

- Natural and Designed World
- Creative Expression and Innovation
- Interpreting Culture
- Formal and Quantitative Reasoning
- Societies and Institutions
- Analyzing and Using Data
- Differences and Diversity
- Ethical Reasoning

The three additional requirements (writing-intensive in the major, capstone, and experiential) are not limited. So, for example, a course may have two out of the first list (such as Differences and Diversity and Societies and Institutions) and *also* fulfill writing-intensive in the major and capstone.

Transfer credit and placement tests can also be used to meet the NUpath attributes of the Northeastern course equivalents. Up to five of the

following eight requirements can be met by transferred or placement test credits:

- Natural and Designed World
- Creative Expression and Innovation
- Interpreting Culture
- Formal and Quantitative Reasoning
- Societies and Institutions
- Analyzing and Using Data
- Differences and Diversity
- Ethical Reasoning

Transfer credits cannot be used to fulfill the capstone or experiential requirements. Of the writing requirements (p. 40), only the first-year writing requirement can be met by transferred or placement test credits.

NUpath Learning Goals

Established and assessed learning goals ensure rigorous opportunities for students to achieve the essential skills and competencies of NUpath regardless of the context or course within which the learning occurs. Any course that meets a NUpath requirement incorporates the learning goals of that requirement. The requirement short name and/or user code is what will appear in course descriptions and student audits.

Engaging with the Natural and Designed World

Short Name: Natural and Designed World
User Code: ND

Students study and practice scientific investigation and/or engineering design in order to understand the natural world and to effect changes in it to meet human and societal needs and wants. They learn critical thinking and analytical problem solving; the biological, chemical, and/or physical principles that govern the natural world; and the efforts that underlie the origins, development, acceptance, and applications of those principles.

LEARNING GOALS

By the end of the course, students should be able to:

1. Formulate a question that can be answered through investigation or a challenge that can be addressed through research or design.
2. Develop and use models based on evidence to predict and show relationships among variables between systems or components of systems in the natural and/or designed world.
3. Use and question scientific principles and practices to evaluate issues raised by the interplay of science, technology, and society.

Exploring Creative Expression and Innovation

Short Name: Creative Expression/Innovation
User Code: EI

Students study and practice creative expression and innovation. They learn about traditions of creative expression and innovation in any of a number of modes (texts, image, sounds, design, etc.) and products (poems, paintings, prototypes, business plans, games, apps, medical devices and procedures, etc.) and develop their own creative processes

and products as a means of seeing and experiencing the world in new ways and communicating those experiences to others.

LEARNING GOALS

By the end of the course, students should be able to:

1. Describe creative processes in one or more disciplines (e.g. art, business, writing, science, engineering).
2. Generate an artifact (e.g., design, poem/essay, application, visualization, musical composition, product, prototype) through a creative process.
3. Evaluate experimentation, failure, and revision in the creation of innovative projects.

Interpreting Culture

Short Name: Interpreting Culture
User Code: IC

Students study and analyze cultural practices, artifacts, and texts (e.g., visual art, literature, theatrical performances, musical compositions, architectural structures). They learn critical reading and observation strategies and how traditions of theoretical, aesthetic, and/or literary criticism provide different lenses for the interpretation of cultural objects and practices.

LEARNING GOALS

By the end of the course, students should be able to:

1. Recognize and identify a variety of cultural practices and creations, their forms of production, and development over time.
2. Acquire and assess techniques of interpretation (including critical reading and observation techniques), criticism, and analysis of cultural practices, texts, and/or artifacts.
3. Formulate arguments for and against different theories and interpretations of cultural practices, texts, and/or artifacts

Conducting Formal and Quantitative Reasoning

Short Name: Formal/Quantitative Reasoning
User Code: FQ

Students study and practice systematic formal reasoning using either the symbolic languages of mathematics and logic or the combinations of text and symbols characteristic of computer software. They learn when and how to apply formal reasoning to particular problems and subject matters.

LEARNING GOALS

By the end of the course, students should be able to:

1. Recognize when examination of a phenomenon or situation can benefit from problem-solving techniques and analyses that use formal reasoning.
2. Use their expertise in some applications of formal reasoning and know when to call upon domain experts when a problem is beyond their personal expertise.
3. Generate artifacts that require formal reasoning and planning. These artifacts might include logical proofs, mathematical computations, software, simulations, problem solutions, or plans/analyses in a variety of disciplines that require a formal, systematic component.

Understanding Societies and Institutions

Short Name: Societies and Institutions

User Code: SI

Students study and practice social science, historical, and/or literary methods of inquiry and theories in order to understand human behavior and cultural, social, political, and economic institutions, systems, and processes. They learn theories of social behavior as they relate to phenomena such as globalization, social change, and civic sustainability.

LEARNING GOALS

By the end of the course, students should be able to:

1. Describe current theories of how social, political, or economic institutions, systems, and processes work.
2. Explain the historical and cultural contingency of many descriptions and explanations of human behavior, institutions, systems, and processes.
3. Evaluate social, political, or economic theories by applying them to local and global phenomena.

Analyzing and Using Data

Short Name: Analyzing and Using Data

User Code: AD

Students study and practice methods and tools of data analysis and use. Students learn about the structure and analysis of at least one type of data (e.g., numbers, texts, documents, web data, images, videos, sounds, maps) and acquire the skills to examine, evaluate, and critique such data; extract patterns; summarize features; create visualizations; and provide insight not obvious from the raw data itself. Students also learn to be sensitive to ethical concerns associated with data: security, privacy, confidentiality, and fairness.

LEARNING GOALS

By the end of the course, students should be able to:

1. Describe how data may be acquired, stored, transmitted, and processed.
2. Analyze at least one important type of data and summarize the results of an analysis in ways that provide insight.
3. Use mathematical methods and/or computational tools to perform analysis.
4. Evaluate and critique choices made in selection, analysis, and presentation of data.

Engaging Differences and Diversity

Short Name: Differences and Diversity

User Code: DD

Students study and practice methods for recognizing and understanding human diversity of various kinds in global, local, and organizational contexts. They learn theories and perspectives of human difference; civic sustainability and multiculturalism; how social arrangements shape and are shaped by difference; and the histories, cultures, and interactions of diverse groups.

LEARNING GOALS

By the end of the course, students should be able to:

1. Describe how notions of human difference have changed over time and across local and global contexts.
2. Discuss the value in recognizing, respecting, and embracing human diversity and how diversity contributes to culture and society, including civic sustainability.
3. Evaluate and compare two or more theories of human difference and approaches to cultivating and leveraging diversity.
4. Connect theories of human difference and approaches to diversity to one's own experience

Employing Ethical Reasoning

Short Name: Ethical Reasoning

User Code: ER

Students study and practice methods of analyzing and evaluating the moral dimensions of situations and conduct. They learn ethical theories and frameworks; explore how conceptions of morals and ethics shape interpretation of concepts such as justice, fairness, rights and responsibilities, virtue, and the good life; and apply these to personal, professional, social, political, historical, or economic questions and situations.

LEARNING GOALS

By the end of the course, students should be able to:

1. Describe the moral and ethical elements of an issue, problem, or situation.
2. Explain at least two key ethical theories.
3. Apply ethical theories to moral dilemmas and personal positions.

Writing Across Audiences and Genres

Short Name: Writing Across Audiences/Genres

Note: This requirement is met by four courses. See more details under **Writing-Intensive Courses** (p. 40).

Students study and practice writing for multiple public, academic, and professional audiences and contexts. They learn to use writing strategies, conventions, genres, technologies, and modalities (e.g., text, sounds, image, video) to communicate effectively.

LEARNING GOALS

By the end of the course, students should be able to:

1. Adapt writing for multiple academic, professional, and public occasions and audiences.
2. Develop facility with genres of their chosen academic field and profession.
3. Identify credible, relevant sources and engage meaningfully with them in their writing.
4. Demonstrate control of writing conventions, including citation standards and mechanics.

Integrating Knowledge and Skills Through Experience

Short Name: Integration of Experience

User Code: EX

Students study and practice the principles and strategies of experiential learning. Through direct experience and reflection on that experience, they learn to recognize and articulate their knowledge and skills, to apply the knowledge and skills they learn in one context to another context, and to determine what knowledge and skills they need to develop to meet their goals.

Learning Goals: By the end of the course, students should be able to:

1. Apply knowledge and skills in new, authentic contexts.
2. Gain new knowledge and develop new skills to successfully engage in unfamiliar tasks and activities.
3. Integrate and use the deepened knowledge and skills as well as the newly gained knowledge and skills to continue to learn in their academic programs.
4. Articulate how and what one learns across a range of contexts.

Demonstrating Thought and Action in a Capstone

Short Name: Capstone Experience

User Code: CE

Each student must take at least one course designated as a capstone experience. Capstone courses may be designed for a specific degree program, for a department, or for a college. The learning goals for a capstone will be developed by the unit that is designing the capstone. Students must complete a capstone in their major. In cases where a student has multiple majors (such as in a combined or double major), the units may specify in which major to take the capstone or may leave the choice to the student.

Writing-Intensive Courses

The faculty expects all students to become effective writers and achieve the learning goals of the "Writing across Audiences and Genres" NUpath attributes. To this end, students are given opportunities to improve their writing throughout their curriculum.

First-Year Writing Requirement

All first-year students must satisfy a first-year writing requirement in one of the following ways:

Code	Title	Hours
ENGW 1111	First-Year Writing	4
ENGW 1110 and ENGW 1111	Introductory First-Year Writing and First-Year Writing	8
ENGW 1102	First-Year Writing for Multilingual Writers	4
ENGW 1101 and ENGW 1102	and First-Year Writing for Multilingual Writers	8

Depending on performance in Introductory First-Year Writing (ENGW 1110) or (ENGW 1101), the second half of the two-course sequence may be waived, as determined by the Department of English. Students must earn a C or better in the required writing course to satisfy the first-year writing requirement.

The First-Year Writing Program conducts a version of "guided self-placement" and requires students bring an essay to the first class meeting; see the course placement webpage ([http://](http://www.northeastern.edu/writing/first-year-writing/course-placement)

www.northeastern.edu/writing/first-year-writing/course-placement) for details.

For more information about the Writing Program, visit the Writing Program webpage (<http://www.northeastern.edu/writing>).

Note: (ENGW 1101) and Introductory First-Year Writing (ENGW 1110) are not credited toward graduation in the College of Engineering.

Advanced Writing Requirement

Advanced Writing in the Disciplines (AWD) is the second course of the university-wide requirement. Students are eligible to enroll in AWD once they satisfy the first-year requirement, earn a minimum of 64 semester hours of academic credit (this number includes the semester in which students enroll in AWD), and have at least junior or senior standing. Students are encouraged to take AWD before they have accrued 96 semester hours. A variety of AWD sections are offered, including Advanced Writing in the Technical Professions, Advanced Writing in the Sciences, and Advanced Writing in the Health Professions, among others. A small number of online sections and sections for non-native speakers of English are also offered. Students should consult with their advisors to choose the section that best suits their needs. Transfer credit cannot be used to satisfy this requirement. Students must earn a C or better to satisfy the advanced writing requirement.

For more information about the Writing Program, visit the Writing Program webpage (<http://www.northeastern.edu/writing>).

Writing-Intensive Courses in the Major

Each major includes at least two additional writing-intensive courses. These courses are characterized by frequent and regular writing, assessment and revision of student work, and the opportunity for students to improve their work.

Additional Requirements for BA Students

In addition to successfully completing the university requirements of NUpath (p. 37), students pursuing a Bachelor of Arts (BA) degree must fulfill the BA core requirements as outlined below.

Language Requirement for BA Students

Each BA student must complete the language requirement by demonstrating proficiency at the elementary level and satisfying an intermediate-level requirement as described below.

ELEMENTARY-LEVEL PROFICIENCY

Satisfy one of the following requirements:

1. Complete elementary-level two (course number 1102) of a language with grades of C or better in all course work (pass/fail grades cannot be used to satisfy this proficiency requirement).
2. Earn a 4 or 5 score on an Advanced Placement (AP) exam in one of the languages offered or receive transfer credit for the equivalent of elementary-level two (course number 1102). Students who have AP or transfer credit must also receive a satisfactory rating in a language-specific interview administered by the World Languages Center upon matriculation.
3. Receive a satisfactory score (as determined by the World Languages Center) on a standardized placement exam and a satisfactory rating in a language-specific interview administered by the World Languages Center upon matriculation.

INTERMEDIATE-LEVEL REQUIREMENT

Satisfy one of the following requirements:

1. Complete a course at the intermediate level (course number 2101 or higher) in the language taken at the elementary level.
2. Complete a course in which the subject matter focuses on some aspect of the culture, history, or society of a part of the world where the language taken at the elementary level is spoken or used by a significant portion of the population. For a course list, visit the myNEU web portal (<http://www.myneu.neu.edu>), click on the "Self-Service" tab, then on "My Degree Audit."
3. Demonstrate conversational proficiency by successfully completing a proficiency interview (scheduled through the World Languages Center). This option is available only for heritage speakers of a language or for students who have completed the elementary-level language requirement through one of the following:
 - a. Advanced placement
 - b. Standardized placement exam as outlined above

University-Wide Requirements

Note: Individual program requirements may exceed the following minima.

Minimum 128 total semester hours required

Minimum 2.000 GPA required

Students must earn a minimum of 64 Northeastern University semester hours in order to receive a bachelor's degree.

Living and Learning Communities

All first-year students are required to live on campus. The First Year Experience (FYE) program has been developed to help Northeastern University's first-year students transition into this new and exciting chapter of their lives—college life. The Department of Residential Life is dedicated to working with Northeastern students to help them build strong community living environments that support personal development and academic success. These environments provide opportunities to learn outside of the classroom through the Living Learning Community program.

The foundation for the FYE program is held by four pillars: personal development, academic success, experiential learning, and community development. These pillars are the guiding principles of the programs and resources specific to the needs of first-year students. The goal is to help students navigate the university and familiarize them in their first year living away from home and with life in a new environment.

Experiential Learning

Website (<http://www.northeastern.edu/experiential-learning>)

Experiential learning offers the opportunity for an education that is richer and more meaningful, providing students with experiences that add depth to their classroom studies and enable them to explore and transform their lives. Experiential learning is tightly integrated with our course curriculum and is supported by advising in the majors as well as advising in the experiential learning group.

The primary ways in which the experiential learning requirement may be satisfied are:

- Cooperative education
- Research or creative activity
- Service-learning
- Global experience

Only one learning experience outside the classroom is required for NUpath. However, students have many additional opportunities for further experiential learning.

Integration of course work and experiential learning occurs throughout the major curriculum as well as in the required capstone course.

Cooperative Education

Website (<http://www.northeastern.edu/coop>)

Cooperative education (co-op) is the cornerstone of Northeastern University's experiential learning approach, in which on-campus study is enhanced by real-world experience at locations all over the world. Through co-op, students alternate periods of academic courses with periods of employment in positions related to their academic or career interests. This combination provides an integrated learning experience that enhances both in-class studies and career development.

Northeastern's cooperative education is a full-time employment experience outside the classroom supporting the concept of experiential learning. Students use the full-time experience to reflect on areas of study and academic interest. Cooperative education experiences are recalled throughout the student's academic career in classes and capstone papers. Students on co-op are required to maintain the same health insurance coverage (either through a private provider or through the university program) as they would while attending classes. In addition, those who wish to do so may live on campus while on co-op. International students must obtain proper authorization from the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) before engaging in or extending any period of co-op.

Co-op Scheduling Options

Northeastern provides the flexibility to pursue co-op and other experiential opportunities in a way that fits individual educational goals. Full-time undergraduates may complete up to three six-month co-ops in five years and as many as two six-month co-ops in four years at Northeastern. The design of some programs, such as pharmacy and theatre, requires four-month co-ops.

All co-op patterns share four semesters when students attend classes on a full-time basis: fall and spring terms of the first year, fall term of the second year, and final term of the senior year. In the first three terms, students have an opportunity to develop academic expertise as well as professional development skills. In the last term, students have an opportunity to integrate their in-class and experiential activities in a capstone course. Generally, half of the required course credit will be completed in these four terms.

The remaining half of the required course credit may be arranged in a variety of schedules that incorporate six-month co-op periods and full-time classes in full semesters and summer half semesters. Students may also elect to take courses (on-campus or online) during co-op periods or to complete extra course credit in some terms. Advisors assist students in developing plans of study that best fit the students' experiential learning goals and the requirements of majors/minors.

For better financial planning, students and parents should be aware that:

1. No tuition is charged while a student is on co-op only (although the student will pay room and board if he or she stays in the dorm).
2. If a student takes a class/earns academic credit while on co-op, tuition will be charged at the per-credit rate.
3. Financial aid will be distributed to match the student's academic program and tuition bills.

Co-op Eligibility

Every student must meet specific eligibility requirements to participate in co-op. These are general requirements for all students; however, students must work closely with their cooperative education coordinator to ensure that they meet any college- or major-specific requirements and are aware of major-specific logistics, deadlines, and required paperwork. In accordance with U.S. federal regulations, international students must not begin, extend, or resume any co-op experience without first receiving employment authorization from the OGS.

General Requirements

Students must:

- Take and pass a preparatory course before starting co-op.
- Satisfactorily complete the requirements and deadlines set by their specific co-op program.
- Register for co-op, either through their pattern of attendance or through a change in pattern of attendance, which must be approved by their cooperative education coordinator and academic advisor.
- Have received a Satisfactory (S) grade and have resolved any outstanding Incomplete (X or I) grades for previous co-ops. Students who have received an Unsatisfactory (U) grade must work with their cooperative education coordinator to reestablish eligibility in accordance with the policies and requirements of their program.
- Resolve any previous disciplinary or academic probation issues, or have their cooperative education coordinator approve a plan to resolve these issues, prior to being referred to co-op jobs.
- Have any self-developed co-op approved by their cooperative education coordinator before accepting the position.
- Comply with any preemployment checks required by the employer, such as drug testing, credit checks, physical examinations, security clearance, and criminal record checks.
- Participate in Title IX training, as required.

Academic Requirements

Students must:

- Be making satisfactory progress toward their degree as defined by the university, their colleges, and the curricula in their major programs.
- Have a cumulative 2.000 grade-point average to be eligible to go on domestic co-op or an international co-op at the time they apply for a co-op position.
- Students must be full-time while on co-op. Full-time status for co-op is defined as either:
 - one full-time co-op job,
 - two part-time co-op jobs, or
 - one part-time co-op job and half-time classes.

Transfer Students

Transfer students from other universities must have met the same requirements in their major's co-op program as nontransfers and must have completed at least one semester of classes before starting co-op. Students transferring from one major to another within Northeastern

must have completed the requisite courses and requirements as defined by their current major's co-op program.

Appeals Process

If students do not meet the co-op eligibility requirements and/or their cooperative education coordinator has determined they are ineligible to go on co-op, they may appeal to the director of cooperative education for their college. If the matter cannot be resolved informally, they may appeal the decision to the college academic standing committee.

Registering for Co-op

Students are registered for co-op based on the job placement in NUcareers. Registration into the co-op experience class occurs one month before the term of the co-op job. All co-op placements need to be approved by a co-op coordinator.

Co-op Documentation

Students who fully and successfully participate in co-op will receive a grade of Satisfactory; those who fail to complete their co-op assignment will receive a grade of Unsatisfactory. These grades will appear on the student's academic transcript. However, no academic credit is awarded for the completed co-op assignment.

Further Information

For more detailed information about co-op policies and procedures, see the *Cooperative Education Student Handbook*.

Research and Creative Activity

Website (<http://www.northeastern.edu/research>)

Pursuing research at the university level makes our students knowledge creators and develops their teamwork skills. The discipline of mind that research requires is one of the best ways to learn to think critically. With dozens of majors and minors, many interdisciplinary research centers and institutes, and more than six hundred full-time faculty engaged in active research and scholarship, Northeastern offers countless opportunities for students to apply their classroom learning to the process of discovery.

Undergraduate students can participate in research and creative activity in a variety of formats, including the following:

- Research courses, which generally fulfill major elective requirements
- Research co-ops or internships
- Community-based research
- Research-based activity as the option for work-study work
- Research as a volunteer activity
- Junior/senior honors research projects

Undergraduate students can apply for funding to support their research projects through the university-wide Provost Undergraduate Research and Creative Endeavor Program and from a number of other offices and programs. They often present their research findings at Northeastern's annual Research Expo, as well as at academic conferences and in scholarly journals.

Service-Learning

Website (<http://www.northeastern.edu/servicelearning>)

Community service is an integral part of Northeastern's mission. But more than good works, community service through structured

service-learning programs on our campus is an academically rigorous educational experience that allows students to broaden their knowledge and skills through service that supports our partnerships with Boston schools, neighborhood agencies, health clinics, and nonprofit organizations.

Students participate in organized service projects, coordinated by their professors and/or program directors, which meet needs identified by the community. Before, during, and after their service, students also engage in structured reflection to help them gain further insight into course or program content, a broader appreciation of their academic disciplines, and a greater sense of civic responsibility.

Global Experience

Website (<http://www.northeastern.edu/studyabroad>)

Marina Markot, PhD, Director

Global Experience Office
403 Richards Hall
617.373.5276
617.373.5702 (fax)
geo@northeastern.edu

Northeastern University strongly endorses global experience as an important dimension of learning. To foster this, it maintains a Global Experience Office (GEO) that has developed a series of programs tailored to the interests and needs of Northeastern University students. Global experiences provide students with opportunities to deepen their knowledge of the world and their chosen field of study, develop intercultural and political sensitivity, utilize and strengthen foreign language skills, and explore global career options.

International Study

While studying abroad in a Northeastern-sponsored program, students maintain full-time Northeastern status and earn Northeastern credits. In all cases, upon successful completion of a program, grades are calculated in the student's grade-point average (GPA). To participate in GEO programs, students should be in good academic and disciplinary standing and have no registration-blocking holds. Traditional study-abroad programs require a GPA of at least 2.500. Some programs may have additional eligibility criteria. Students must also meet the requirements of the host institution abroad. Full information and application deadlines are posted on the GEO website (<http://www.northeastern.edu/studyabroad>).

Students who wish to study abroad should start by researching program opportunities on the GEO website (<http://www.northeastern.edu/studyabroad>) or by attending an information session or walk-in advising hours. Students refine their search by working with GEO advisors who provide the final planning assistance. Schedules for information sessions and walk-in advising hours are available on the GEO website and in the GEO office. After choosing a program, students should also consult with their departmental or college advisors. International students should also consult with the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) to determine if an updated I-20 for reentry may be needed. Note that studying abroad in a student's final semester may result in a delay in graduation due to calendar discrepancies across institutions.

Types of Programs

Northeastern University offers different types of study-abroad programs, with multiple options within each type. This robust program portfolio

contains global experiences for any major on campus. Students are able to participate in multiple programs during their time at Northeastern.

1. **Study abroad (semester or summer).** Students are based at a partner institution where they attend classes, participate in student activities, and organize their extracurricular schedules just as they would on campus at Northeastern. Some examples include University of Sydney in Sydney, Australia; Technion: Israel Institute of Technology in Haifa, Israel; University of Montevideo in Montevideo, Uruguay; London School of Economics in England, United Kingdom; and the University of Tokyo in Tokyo, Japan.
2. **Dialogue of Civilizations.** The Dialogue of Civilizations are faculty-led study-abroad programs that build upon and enhance the students' academic studies and training in Boston. The Dialogues allow students to engage with course content in different national, cultural, political, and social contexts. The programs foster meaningful conversations between Northeastern students and people around the world, including their peers.
3. **Internship.** These programs offer a combination of classes and related work experience for which students earn academic credit. Examples of internships students have held in the past include accounting at Morningstar in Sydney, Australia, as well as internships in various European parliaments such as Brussels, London, and Dublin.
4. **International research.** The focus of a student's time abroad is on an independent research project. In most cases, the study-abroad program organizes small group seminars and field trips that are designed to help students learn about their international environment and focus on a research topic. Students spend three to four weeks toward the end of the semester working on their individual projects. Examples of projects could be studying tropical biology in Costa Rica, history and culture in Vietnam, and oceanography while sailing in the Atlantic/Pacific cruise track of the SEA Semester Program.

Visit the GEO website (<http://www.northeastern.edu/studyabroad>) to see a complete list of program options.

Global Co-op

The Global Cooperative Education Program provides opportunities for Northeastern students to co-op on all seven continents with foreign and multinational employers, U.S. employers doing business abroad, and other international organizations. Students may apply for existing positions or work with a co-op counselor to develop their own. All majors are welcome to apply. International students participating in co-op abroad should consult with the OGS in advance of departure to ensure reentry to the United States in proper nonimmigrant visa status. The Presidential Global Scholars Program (<https://studentfinance.northeastern.edu/applying-for-aid/undergraduate/types-of-aid/scholarships/presidential-global-scholars-program>) provides financial support for international co-op.

World Languages Center

Stacey Bourns, PhD
Director

201 Renaissance Park
617.373.3131
[Stacey Bourns, Director, s.bourns@northeastern.edu](mailto:s.bourns@northeastern.edu)

The primary goal of the World Languages Center (WLC) is to offer an expanding array of languages in a variety of instructional formats for

Northeastern students and to ensure that students will be able to take at least two years of instruction (four semesters) in any language offered by the WLC and up to three years of instruction (six semesters) in many of the languages offered.

Placement Assessment

Students with prior experience in French, German, or Spanish must take the online written placement exam if they wish to enroll in a French, German, or Spanish language class. The link for this exam can be found on the WLC or the Languages, Literatures, and Cultures website. Students with prior experience in any other language must contact the WLC to make an appointment for a placement assessment interview. Results of a student's online placement or interview assessments are valid for one year only.

Any student with prior experience in a language who registers for a language course without taking the WLC online placement test or a WLC placement assessment will not receive a letter grade for the course.

Attendance in Language Classes

The development of competence in a language requires regular and structured interaction opportunities. Thus, the WLC takes attendance in language classes very seriously. Each missed class will have specific consequences, including a negative impact on a student's final grade. Classes missed as a result of registering late for a class will count as unexcused absences; if students believe they have been inappropriately placed in a language class, they should contact the WLC immediately.

Auditing Language Classes

Auditing language classes is not permitted. Students who are not on the official roster of a class may not sit in on the class.

Immersion Language Classes

The WLC offers off-campus language immersion classes in a variety of languages. These immersion classes are numbered 1301, 1302, 2301, 2302, 3301, and 3302 and are designed to be part of a faculty-led study trip. Typically, these classes are offered during summer 1 and summer 2 terms. These courses will count toward fulfillment of the BA language requirement, assuming a student receives a grade of C or better.

Study-Away/Abroad Classes

The WLC will authenticate credit-bearing language classes taken in study-away/abroad programs at accredited institutions in fulfillment of and as equivalent to WLC language classes numbered 1101, 1102, 2101, or 2102. Students must receive approval of language course equivalence from the WLC before embarking on a study-away/abroad program. Failure to do so may mean that the courses taken away/abroad will not be accepted in lieu of on-site Northeastern language courses and thus may not satisfy the language requirement. Credit is granted only for successful completion of the course.

BSIB Language Classes

The Bachelor of Science in International Business program is offered through the D'Amore-McKim School of Business. Because of the intensive expectations of the program (one semester in classes abroad, one semester international co-op), the WLC offers classes that are restricted to BSIB students only. These courses are numbered 1201, 1202, 2201, 2202, 3201, 3202, 4201, and 4202. Only BSIB majors may enroll in these BSIB-designated courses.

University Scholars Program

Jonna Iacono, PhD

Director

411 Richards Hall
617.373.3202
617.373.6597 (fax)
universityscholars@northeastern.edu

Launched in fall 2012, the Northeastern University Scholars Program is a full-tuition scholarship program offered to a limited number of students. Individuals invited to join this program have distinguished themselves academically; displayed an entrepreneurial approach to study, achievement, involvement, and life; and have demonstrated curiosity and creativity that extend far beyond the classroom to impact the world around them. The program is intended to meet the interests of students who demand to be challenged, are passionate about learning, and will innovate when given the freedom to explore.

University Honors Program

Laurie Kramer, PhD

Director

150 Richards Hall
617.373.2333
617.373.5300 (fax)
honors@northeastern.edu

The University Honors Program values integrated, student-directed, and experiential learning that is personalized to meet students' unique interests and goals. Our community of intellectually engaged students, advisors, and faculty are committed to making a difference at home and in the world. Students benefit from unique and enriched educational options that include stimulating courses and opportunities for global exploration, research and creative endeavors, service-learning, mentoring, and more. Honors students are guided and supported as they chart their unique educational plans through personalized advising and through their participation in a set of networked communities that include Honors Living Learning Communities.

All applicants seeking freshman entry at Northeastern University (for fall semester entry) are considered for admission into the University Honors Program and are notified of their selection in their letter of admission. There is no separate application. Continuing students in their first or second semester who wish to be considered for the University Honors Program may consult the program's website for instructions on how to apply: www.northeastern.edu/honors (<http://www.northeastern.edu/honors>).

Northeastern Explore Program

Website (<http://www.northeastern.edu/undeclared>)

Kim Irmiter, MA

Director

1 Meserve Hall
617.373.2306

The Northeastern Explore Program welcomes entering students who would like to explore their academic interests before choosing a major and introduces them to the university's broad range of disciplines. Working closely with a combination of faculty, academic advisors, and undergraduate peer mentors, undeclared students at Northeastern are engaged in personal and meaningful discovery. They are not just

seeking a major; they look for clues to the future and find answers to the question: "How will I make my impact?"

Undeclared students enroll in a small-cohort freshman seminar taught by a Northeastern academic advisor and two student leaders. In this seminar, students develop strategic exploration plans to ensure they are able to take full advantage of the vast array of academic and experiential opportunities offered at Northeastern. Students will also attend exploratory programs where they engage with faculty and students in majors to gain an informed understanding of the disciplines that interest them most.

Students may declare a major at any time but are expected to do so by the end of sophomore year. Admission to a particular major is dependent on satisfying the criteria described under "Changing Majors (p. 32)."

Premedical and Other Preprofessional Health Career Preparation

Website (<http://www.northeastern.edu/prehealth>)

Prehealth Studies

Because medical schools place a priority on well-rounded achievement, the prehealth course requirements can be integrated into any major at Northeastern. Medical school admission committees generally give no preference to any particular undergraduate major. As such, students should focus on meeting the course requirements of their chosen field of study, together with the prehealth professions requirements, with demonstrated academic rigor and excellence. For some majors it may be necessary to complete additional credit hours of course work, with associated tuition, to fulfill all prehealth requirements. Prehealth students should research requirements and plan a program of study as early as possible in consultation with both major and prehealth advisors to ensure that requirements will be completed in a timely fashion.

The PreHealth Advising Program provides support for Northeastern students who are planning to pursue doctoral-level training in medicine, including allopathic medicine (MD), dentistry, optometry, osteopathic medicine, podiatric medicine, and veterinary medicine.

Prerequisite Courses

Most health professional schools require a common set of courses. The following program meets the minimum requirements of most health professional programs. Students should work with prehealth advisors to review their course selections.

Note: Corequisite laboratories are required for most science courses.

BIOLOGY

Introductory biology (typically two semesters)

The following course work is required or recommended by many programs and necessary for MCAT preparation:

- Genetics and molecular biology
- Biochemistry

Additional biology courses are required or recommended by many programs and may be helpful for admission exam preparation.

CHEMISTRY

- General chemistry
- Organic chemistry

PHYSICS

Two semesters

MATHEMATICS

Two semesters of calculus and/or statistics

ENGLISH

Two semesters

Some programs require both writing and literature courses.

BEHAVIORAL SCIENCES

The following course work is required or recommended by many programs and necessary for MCAT preparation:

One semester each of psychology and sociology

Additional courses may be required or recommended by individual schools or programs. Students should refer to school websites as well as the appropriate official admission guidebooks for up-to-date information:

- ADEA Official Guide to Dental Schools (<http://www.adea.org>)
- College Information Book (<http://www.aacom.org>)
- Colleges of Podiatric Medicine Admissions Requirements (<http://www.aacpm.org>)
- Medical School Admissions Requirements (<http://www.aamc.org>)
- Schools and Colleges of Optometry Admissions Requirements (<http://www.opted.org>)
- Veterinary Medical School Admissions Requirements (<http://www.aavmc.org>)

Prelaw Preparation

Website (<http://www.northeastern.edu/prelaw>)

Northeastern University adopts in full the statement of the American Bar Association on the "Preparing for Law School (<http://www.abanet.org/legaled/prelaw/prep.html>)" page of its website. Most law school admission committees give no preference to any particular undergraduate major.

The primary goal of the Prelaw Program at Northeastern is to assist current students, staff, and alumni in navigating the law school application process. This includes identifying and researching a variety of law schools to which the person may want to apply. For current Northeastern students, the Prelaw Program provides academic advising that guides course selection and activities aimed at maximizing the student's chance of being admitted to law school. These courses must have at least one, and preferably more, core skills and values, such as analytic/problem-solving skills, critical reading, writing skills, oral communication/listening abilities, general research skills, task organization/management skills, public service, and promotion of justice.

Education

Website (<http://www.cps.neu.edu/discover/schools-institutes/school-of-education.php>)

Lydia Young, PhD

Interim Associate Dean, Academic and Faculty Affairs,
Graduate School of Education

41 Belvidere
617.373.4216
617.373.6600 (fax)

Lydia Young, Associate Dean, l.young@northeastern.edu

Northeastern University's Department of Education offers a Master of Arts in Teaching (MAT) PlusOne program. The program provides a pathway for undergraduate students in the College of Arts, Media and Design; College of Science; and College of Social Sciences and Humanities who aspire to be elementary or secondary classroom teachers.

Programs

Dual Degree

- MAT PlusOne Program (p. 46)

Teaching, MAT PlusOne Program

The Master of Arts in Teaching (MAT) PlusOne program provides a pathway for undergraduate students in the College of Arts, Media and Design; College of Science; and College of Social Sciences and Humanities who aspire to be elementary (1–6) or secondary (8–12) classroom teachers. Undergraduates in majors that align with approved areas of educator licensure can complete their bachelor's degree in four years and earn a Master of Arts in Teaching in just one additional year. In consultation with their advisor, undergraduates may complete up to 12 semester hours of MAT course work and apply these credits toward their bachelor's degree. This partnership between the colleges and the Graduate School of Education leads to initial licensure, as approved by the Massachusetts Department of Elementary and Secondary Education (DESE).

Interested students must express their interest and submit admissions materials by March 1st during their third year. To apply, you do not have to submit a full application. However, to qualify you must:

- Be enrolled in an appropriate major
- Plan in consultation with advisor and Graduate School of Education lead faculty
- Apply to the PlusOne MAT during your third year
 - Submit a statement of purpose
 - Provide a letter of recommendation from a faculty member
- Hold an overall GPA of 3.000 or higher
- Earn a B or higher in Education in the Community (EDUC 1111), Child and Adolescent Development, Learning, and Teaching (EDUC 5504), Inclusion, Equity, and Diversity (EDUC 5570), and Culture, Equity, Power, and Influence (EDUC 5503)
- Take and pass *all* required MTEs by early March of your fourth year

Please contact your undergraduate advisor to learn more about this opportunity.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Requirements

Complete all education courses with a cumulative GPA of 3.000:

Code	Title	Hours
EDUC 1111	Education in the Community	4
EDUC 1111 should be taken no later than the first semester of the third year		
EDUC 5503	Culture, Equity, Power, and Influence	4
EDUC 5504	Child and Adolescent Development, Learning, and Teaching	4
EDUC 5570	Inclusion, Equity, and Diversity	4
A required education or education-related co-op		

Army, Air Force, and Navy Reserve Officers' Training Corps (ROTC) Programs

Army ROTC Program

Major Joseph L. Luchetta
Professor and Chair, Department of Military Science

335A Huntington Avenue
617.373.2375
617.373.8677 (fax)
Army ROTC website (<http://www.rotc.neu.edu>)
Sheila Hutchins, ROTC Staff Assistant, s.hutchins@northeastern.edu

The Department of Military Science offers the Army Reserve Officers' Training Corps (ROTC) program. The goal of the program is to develop leadership potential in men and women and to prepare them for an officer's commission in the Active Army, Army Reserve, or Army National Guard. The curriculum teaches principles of leadership and personnel management and seeks to develop leadership traits such as teamwork, responsibility, initiative, self-confidence, and discipline.

The Army ROTC program is conducted at Northeastern University. For more information, write:

Department of Military Science
Northeastern University
335A Huntington Avenue
Boston, MA 02115

or call 617.373.2375

Completion of the Army ROTC program will lead to a commission as a second lieutenant in the United States Army, Army Reserve, or the Army National Guard. The program consists of the basic course (freshman and sophomore years) and advanced course (junior and senior years). The program does not conflict with co-op schedules.

Enrollment in the basic course is voluntary and is open to all full-time students. However, only cadets formally enrolled in ROTC may participate in leadership labs, physical training, and practical field exercises. Students in the basic course do not incur a military obligation. Check with your academic department to ensure credits are accepted.

The advanced course is open to all qualified students who have basic course credit or equivalent military experience, as well as meet the Army's physical, medical, and age requirements. Contracted students (advanced course and/or scholarship) receive a monthly cash stipend while in school. Scholarship students also receive full tuition and fees as well as \$1,200 per year for books. Scholarships are merit based and are awarded as four-year, three-year, or two-year benefit packages.

Army Nurse Corps ROTC Program

ROTC provides an opportunity for college nursing students to receive practical, hands-on leadership experience. The courses provide a chance for students to develop management, communication, and decision-making skills. ROTC also provides nursing cadets an opportunity to participate in the Nurse Summer Training Program (NSTP). NSTP is a paid, three-to-four-week, hands-on clinical elective for Army ROTC nurse cadets. This elective is conducted at more than twenty Army hospitals in the continental United States, Hawaii, and Germany. During the NSTP clinical elective, the cadet receives experience under the direct supervision of a preceptor—an Army Nurse Corps officer who works with the cadet one-on-one. Scholarship nurse cadets receive a monthly cash stipend while in school as well as full tuition and fees and \$1,200 per year for books.

Navy ROTC Program

The Boston Navy ROTC (<https://www.bu.edu/rotc/navy/contact>) unit is a six-school consortium that includes students from Boston University, Boston College, Northeastern, Tufts, Harvard, and MIT. All Navy ROTC scholarships are for nursing only and cover full tuition, mandatory fees, a \$375-per-semester book stipend, and a \$250-per-month living stipend that increases by \$50 each year up to \$400. Room and board are not included in the scholarship. For students on Northeastern's five-year program, the Navy grants "Fifth Year Benefits," which mirror those of the fourth year. Upon graduation, there is a four-year active-duty commitment.

NROTC nursing students are required to take four naval science classes, in addition to their regular course work, and attend a leadership laboratory once a week. All classes, labs, and group workouts are conducted at Boston University. Students typically spend a total of six to eight hours per week participating in NROTC-related activities. Additionally, Navy nurses complete two summer cruises, or training sessions, prior to graduation, each of which lasts approximately four weeks. They spend one session with a medical unit at sea (on a Navy ship) and one session at a land-based Navy hospital. All lodging, transportation, meals, and uniforms are paid for by the Navy during summer training sessions. For more information, contact the recruiting officer at 617.358.3470 or navyrotc@bu.edu.

Air Force ROTC Program

Air Force ROTC is an educational and leadership program designed to give men and women the opportunity to become an Air Force officer while completing a bachelor's degree.

Through a cross-enrolled program with Boston University, interested Northeastern University students may participate in the Air Force Reserve Officer Training Corps Program. The requirements include aerospace studies classes, leadership laboratory classes, and physical fitness training. The mandatory weekly commitments range from five to seven hours per week.

In addition to the leadership and management training that cadets receive, they also benefit from several scholarship programs. *High school seniors* can apply for four-year scholarships. The scholarships range from full tuition, \$18,000 per year, and \$9,000 per year. Scholarship winners will also receive a monthly stipend, a book allowance, and uniforms. Applications for scholarships are due by December 1 of senior year. Apply at the Air Force ROTC website (<http://www.AFROTC.com>).

Freshmen and sophomores already in college can compete for three or three-and-a-half-year scholarships, some of which cover full tuition, while

others cover \$18,000 per academic year. All scholarship winners will receive a monthly stipend, a book allowance, and uniforms.

However, students do not need a scholarship to commission through Air Force ROTC. For more information, call 617.353.6316 or 617.353.4705.

General Studies Program

Website (<http://www.northeastern.edu/gsp>)

Lynn Dornink, MA
Director

1 Meserve Hall
617.373.2306

The General Studies Program (GSP) is a full-year program for entering freshmen, offering a unique learning environment where faculty, advisors, and peer leaders provide guidance and support to ensure the students' academic success. The GSP curriculum satisfies first-year academic requirements and is geared to students' academic and career goals. Program benefits include a low student-advisor ratio, fall and spring critical-thinking seminars taught by the student's GSP advisor, a learning community organizational model, a writing-intensive curriculum, and access to a nationally certified peer tutoring program. All majors have defined entrance requirements; therefore, beginning in September, GSP advisors work closely with students to guide them toward their intended majors' requirements. Following the successful completion of the General Studies year, and the meeting of the major requirements, students enter one of the university's seven undergraduate colleges with sophomore status in a specified major. Students may also choose to enter the Program for Undeclared Students with sophomore status. GSP students who have not met the academic progression standards for transitioning by the end of two semesters may continue in the GSP for an additional semester.

Academic Progression Standards

GSP students must meet the following criteria to successfully transition to sophomore standing:

1. 2.000 GPA (individual program entrance requirements vary)
2. 28 semester hours of credit (32 recommended)
3. Successful completion of college/major transition requirements

For more details about transitioning to individual colleges, see below.

Transitioning to Major

For information about transitioning to majors across the university, see "Changing Majors (p. 32)."

Academic Probation

Same as university standards.

University Withdrawal, Low Scholastic Performance

Same as university standards.

About Sample Curricula

The university's official repository of curricular information is this undergraduate catalog in conjunction with the Degree Audit Reporting System. In case of discrepancy, the Degree Audit Reporting System shall take precedence. All curricula are approved through the university undergraduate curriculum committee. Undergraduate students should

consult with their academic advising office to make certain they have all the necessary resources before planning a curriculum.

work at least 12 hours per week to earn academic credit for an internship in a term, as equated to the course credit guidelines.

Undergraduate Degrees

Listed below are the degrees conferred by the undergraduate full-time day colleges at Northeastern University.

College of Arts, Media and Design

- Bachelor of Arts
- Bachelor of Fine Arts
- Bachelor of Landscape Architecture
- Bachelor of Science

D'Amore-McKim School of Business

- Bachelor of Science in Business Administration
- Bachelor of Science in International Business
- Bachelor of Science (combined majors only)

College of Computer and Information Science

- Bachelor of Arts in Computer Science
- Bachelor of Science in Computer Science
- Bachelor of Science in Data Science
- Bachelor of Science in Information Science
- Bachelor of Science (combined majors only)

College of Engineering

- Bachelor of Science in Bioengineering
- Bachelor of Science in Chemical Engineering
- Bachelor of Science in Civil Engineering
- Bachelor of Science in Computer Engineering
- Bachelor of Science in Electrical Engineering
- Bachelor of Science in Environmental Engineering
- Bachelor of Science in Industrial Engineering
- Bachelor of Science in Mechanical Engineering

Bouvé College of Health Sciences

- Bachelor of Science
- Bachelor of Science in Nursing
- Bachelor of Science in Rehabilitation Science
- Doctor of Pharmacy (six-year program)
- Doctor of Physical Therapy (six-year program)

College of Science

- Bachelor of Arts
- Bachelor of Science

College of Social Sciences and Humanities

- Bachelor of Arts
- Bachelor of Science

Undergraduate Internships

An undergraduate Internship is defined as an unpaid opportunity for supervised practical experience related to the student's academic area of study. Internships must be correlated to program curriculum, approved by an academic entity, and supervised by a faculty member. Students must

College of Arts, Media and Design

Website (<https://camd.northeastern.edu>)

Elizabeth Hudson, PhD, Dean

Andrea Raynor, MFA, Associate Dean for Undergraduate Programs
Jane Amidon, MLA, Associate Dean for Graduate Programs and Research
Hilary Poriss, PhD, Associate Dean for Faculty and Academic Affairs
Thomas Michael, MBA, Associate Dean for Administration and Finance
Katherine Calzada, M.Ed, Assistant Dean for Research Development
Adam Smith, MBA, Assistant Dean for Academic Programs

102 Ryder Hall
 617.373.3682
 617.373.5084 (fax)
camd@northeastern.edu (camdadvising@northeastern.edu)

In today's global economy, the disciplines within the College of Arts, Media and Design are powerful drivers of growth and innovation. Creative fields and evolving technology make it possible to connect people and ideas as never before, serving as strong catalysts for change and expanding the understanding of our shared humanity.

The college integrates programs of study in architecture, art and design, communication studies, game design, journalism, media and screen studies, music, and theatre with meaningful experiential learning opportunities, enabling students to explore their passions and prepare for postgraduate opportunities in their chosen fields.

The college offers Bachelor of Arts, Bachelor of Science, and Bachelor of Fine Arts degrees in a number of majors, as well as interdisciplinary programs, and emphasizes general education through the NU Core. Opportunities available to students in the College of Arts, Media and Design include national and international programs for study and experience; programs in field settings, both local and abroad; and programs involving affiliations in such areas as professional performing arts organizations and media organizations. The college also emphasizes experiential learning through cooperative education; service-learning; and other kinds of internships, student-faculty research collaborations, and study abroad.

Students may choose a four- or five-year experiential learning plan in most programs. Either plan offers co-op opportunities, typically in an area related to the student's chosen academic area. Students are normally eligible to participate in co-op as early as the second semester of their sophomore year.

Many programs are flexible enough to allow students to pursue a double major, a major and a minor, or one of the college's combined majors. The college also offers students the opportunity to create an independent major in cases where their interests and goals are not met by an existing major program.

Academic Advising

The College of Arts, Media and Design has an academic advising (<https://camd.northeastern.edu/academics/advising>) system that consists of academic advisors located in the Academic Advising and Cooperative Education office in 100 Meserve Hall and faculty mentors located in the college's academic schools and departments. Detailed advising information is available on the college website (<https://camd.northeastern.edu/academics/advising>). Prelaw advising (<http://www.northeastern.edu/prelaw>) and premedical/pre dental advising

(<http://www.northeastern.edu/prehealth>) are also available. We can be reached by phone at 617.373.5583, by fax at 617.373.8719, or by email at camdadvising@northeastern.edu.

Academic Progression Standards

The College of Arts, Media and Design adheres to the university's academic progression standards (p. 31). Some programs have additional specific requirements in order to progress from year to year or to graduate from that program. This information can be found on each program's page.

Graduation Clearance Process

Students in the College of Arts, Media and Design are required to meet with their assigned academic advisor in 100 Meserve Hall to determine their remaining graduation requirements. Some departments also require a meeting with a faculty mentor. The graduation clearance (<https://camd.northeastern.edu/academics/advising/faq/#clearance>) process should be completed in the junior year to facilitate planning of all remaining requirements.

College Requirements

All students in the College of Arts, Media and Design must successfully complete the university requirements of NUPATH (p. 37). In addition, students pursuing a Bachelor of Arts degree (BA) must fulfill the BA requirements (p. 40).

School of Architecture

Website (<http://camd.northeastern.edu/architecture>)

Dan Adams

Director and Associate Professor
da.adams@northeastern.edu

Kate Zephir

Administrative Assistant
k.zephir@northeastern.edu

151 Ryder Hall
 617.373.4637

Architecture and urban landscape are the context for civic life. In an age of increasingly rapid technological and social change, these fields forge connections between our past and our future. This involves critical thinking about many complex contemporary issues, such as the relationship of public and private life, the interaction between formal and political ideas in cities, and the role of technology in the design, construction, and management of contemporary spaces. Because the process of design involves the synthesis of disparate elements, it can also translate into strategies for approaching a wide range of other problems not traditionally understood to be "architecture." At Northeastern, we connect specific problem solving inherent to architectural and landscape architectural understanding with the larger context of contemporary cities.

The curriculum teaches students to conceptualize, synthesize, and represent complex architectural, urban, and environmental issues. The program focuses on core skills and critical thinking as preparation for both professional practice and advanced study. The curriculum in the design studio encompasses two major themes: First, the studio projects

focus on the art of building and environmental performance, and second, the projects explore how designed environments—from buildings to regional infrastructures—affect urban conditions. The art of building includes the study of construction and technology, as well as the cultural messages created by the expression of material, structure, and form. Environmental performance includes imagining how we can live more sustainably by developing innovative design solutions for synthesizing natural and urban conditions. The contemporary city is our laboratory. This urban focus requires that students integrate their own creative impulses with the future of the society of which they will be a part. By building on the practical and technical training afforded by co-op to develop core professional skills, the curriculum focuses on architecture and landscape architecture's fundamental aesthetic, technological, social, and political aspects.

With the effective synthesis of the art of building and environmental performance with urban issues, Northeastern's programs in architecture and urban landscape are becoming a leader in identifying opportunities for civic representation, urban development, and neighborhood design. Northeastern's students are in demand because of their combination of professional competence and fluency in urban architectural and environmental design issues. There are opportunities for interdisciplinary cooperation in urban-oriented research and creative work in areas such as the economics of urban redevelopment; the design and planning of resilient food, water, energy, transit, and industrial systems; urban public policy; and new forms of spatial and visual communication. Additionally, Northeastern's urban focus is applied globally in the semester abroad.

External Transfers

Full-time architecture faculty members may evaluate nonstudio courses for conformity with NU requirements using transcripts and course descriptions. Any student seeking studio course credit (drawing, technology, or design) must present a portfolio for review and evaluation.

Portfolios are optional, though encouraged, for freshman applicants.

Academic Progression Standards

A minimum grade-point average (GPA) of 2.500 is required to remain in the majors of architecture or urban landscape. Students below this average will not be allowed to continue in these majors.

A minimum GPA of 2.000 is required to remain in the major of architectural studies. Students below this average will not be allowed to continue in the major.

To graduate, a student must have a 2.500 GPA in architecture or urban landscape.

Preapproved Template Programs in Architecture and in Urban Landscape

The School of Architecture offers preapproved template programs in architecture and in urban landscape. Each template program may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<https://registrar.northeastern.edu/article/combined-majors>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the

myNortheastern web portal (<http://www.myneu.neu.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

Programs

Bachelor of Science (BS)

- Architecture (p. 50)
- Architectural Studies (p. 52)
- Architecture and English (p. 55)
- Architecture and Graphic and Information Design (p. 57)

Bachelor of Landscape Architecture (BLA)

- Landscape Architecture (p. 54)

Minors

- Architectural and Urban History (p. 59)
- Urban Landscape Studies (p. 59)

Architecture, BS

Website (<https://camd.northeastern.edu/architecture/academic-programs/architecture>)

Undergraduate Program Coordinator

Lucy Maulsby, PhD
Associate Professor
l.maulsby@northeastern.edu
383 Ryder Hall

The curriculum pairs studio courses with relevant architecture history and technology courses to support the comprehensive learning experience of the student. Students engage in intensive studio projects that encourage them to seek prototypical solutions to problems in the modern city. Instruction takes place in the studio with one-on-one consultations with faculty, critiques with classmates, and formal reviews. Visiting critics participate in reviews, and there is a lecture series that brings prominent professionals on campus to discuss the work they are doing in the field.

As part of their studies, students are enrolled in two six-month co-ops (<https://camd.northeastern.edu/architecture/experiential-learning-co-op/co-op>). This allows students to gain real-world experience in architecture that aids them in both their academic development and in professional advancement. Co-op experience can often be applied to one's AXP (<http://www.ncarb.org/Experience-Through-Internships.aspx>) credits.

The School of Architecture offers a NAAB (<http://www.naab.org>)-accredited one-year program to our students who have successfully completed the BS degree in architecture. This allows our own students to achieve a master's degree in an efficient and timely manner.

Applicants should note that the BS degree in architecture is not sufficient by itself to meet the academic requirement to sit for state licensure. (Most undergraduate architecture degrees are not accredited.) Students who graduate with the BS degree have the option to apply to the one-year NAAB-accredited Master of Architecture (<https://camd.northeastern.edu/architecture/academics/graduate>) degree that is open to our BS graduates in good standing.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath attributes Natural and Designed World (ND), Creative Expression and Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Societies and Institutions (SI), Analyzing and Using Data (AD), and Difference and Diversity (DD) are met through the major course requirements.

In order to graduate, students must complete Ethical Reasoning (ER) in their electives.

Architecture Major Requirements

Code	Title	Hours
SEMESTER 1		
ARCH 1000	Architecture at Northeastern	1
ARCH 1310 and ARCH 1311	Architecture and Global Cultures, Prehistory to 1400 and Recitation for ARCH 1310	4
SEMESTER 2		
ARCH 1110	Fundamental Architectural Representation (Studio 1)	4
ARCH 1120	Fundamental Architectural Design	6
<i>Architecture History Requirement</i>		
Complete one of the following:		4
ARCH 1350	American Architecture	
ARCH 2320	Chinese Architecture 2: Modern	
SEMESTER 3		
ARCH 2130	Site, Space, and Program	6
ARCH 2240	Architectonic Systems	4
ARCH 2330 and ARCH 2331	Architecture, Modernity, and the City, 1800 to 1910 and Recitation for ARCH 2330	4
SEMESTER 4		
ARCH 2140	Urban Institutions	6
ARCH 2340 and ARCH 2341	Architecture, Modernity, and the City, 1910 to 1980 and Recitation for ARCH 2340	4
ARCH 3210 and ARCH 3211	Environmental Systems and Recitation for ARCH 3210	4
ARCH 3450	Advanced Architectural Communication ¹	4
SEMESTER 5		
Abroad:		
ARCH 3155	Studio Abroad	3.2
ARCH 3361	Architecture and Urbanism Abroad	3.2
ARCH 3363		1.6
ARCH 3363		1.6
ARCH 3440	Workshop Topics Abroad	1.6
SEMESTER 6		
ARCH 3170	Architecture, Infrastructure, and the City	6

ARCH 5230 and ARCH 5231	Structural Systems and Recitation for ARCH 5230	4
SEMESTER 7		
ARCH 3370	Topics in Architectural History	4
ARCH 5115	Option Studio	6
ARCH 5310	Design Tactics and Operations	4
SEMESTER 8		
ARCH 5120	Comprehensive Design Studio	6
ARCH 5220	Integrated Building Systems	4

¹ Please note: Advanced Architectural Communication (ARCH 3450) may also be taken in Summer 2 after year two or year four.

Supporting Courses

Code	Title	Hours
SEMESTER 1		
ENGW 1111	First-Year Writing	4
MATH 1241	Calculus 1	4
SEMESTER 2		
PHYS 1141	General Physics	4
EEAM 2000	Professional Development for Co-op	1
SEMESTER 6		
ENGW 3314	Advanced Writing in the Arts, Media, and Design	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Cooperative Education

Architecture majors are required to complete two six-month co-ops.

COOP 3945	Co-op Work Experience
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Important Note

When registering for classes, note additional electives are required. If you are taking less than 18 semester hours during fall or spring semesters, verify with your advisor that you have registered for all required electives.

Major GPA Requirement

Minimum 2.500 GPA required

Architecture Major Credit Requirement

Complete 96 semester hours in the major.

Program Requirement

146 total semester hours required

Plan of Study

Five Years, Two Co-ops in Summer 2/Fall

Division A—Last Name Begins with A–L

Year 1		Year 2		Year 3		Year 4		Year 5	
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Summer 1	Hours
ARCH 1000	1	ARCH 1110	4	Vacation	0	Vacation	0		
ARCH 1310 and ARCH 1311	4	ARCH 1120	6						
ENGW 1111	4	EEAM 2000	1						
MATH 1241	4	PHYS 1141	4						
Elective	4	Elective	4						
		17		19		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 2130	6	ARCH 2140	6	Vacation	0	Co-op	0
ARCH 2330 and ARCH 2331	4	ARCH 2340 and ARCH 2341	4				
ARCH 2240	4	ARCH 3210 and ARCH 3211	4				
Elective	4	ARCH 3450 ¹	4				
		18	18	0	0	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ARCH 3155	3.2	Vacation		Vacation	
		ARCH 3361	3.2				
		ARCH 3363	1.6				
		ARCH 3363	1.6				
		ARCH 3440	1.6				
		Humanities elective	3.2				
		Language elective	1.6				
		15.999999999999998		0	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 3170	6	ARCH 5115	6	Vacation		Co-op	0
ENGW 3314 or 3315	4	ARCH 3370	4				
ARCH 5230 and ARCH 5231	4	ARCH 5310	4				
Elective	4	Elective	4				
		18	18	0	0	0	0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	ARCH 5120	6
		ARCH 5220	4
		Elective	4
		Elective	4
		0	18

Total Hours: 142

Five Years, Two Co-ops in Spring/Summer 1

Division B—Last Name Begins with M–Z

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 1000	1	ARCH 1110	4	Vacation	0	Vacation	0
ARCH 1310 and ARCH 1311	4	ARCH 1120	6				
ENGW 1111	4	PHYS 1141	4				
MATH 1241	4	EEAM 2000	1				
Elective	4	Elective	4				
		17	19	0	0	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 2130	6	ARCH 2140	6	Vacation	0	Vacation	0
ARCH 2330 and ARCH 2331	4	ARCH 2340 and ARCH 2341	4				
ARCH 2240	4	ARCH 3450 ¹	4				
Elective	4	ARCH 3210	4				
		18	18	0	0	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 3155	3.2	Co-op		0	Co-op	0	Vacation
ARCH 3361	3.2						
ARCH 3362	3.2						
ARCH 3363	1.6						
ARCH 3363	1.6						
ARCH 3440	1.6						
Language elective	1.6						
		16	0	0	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 3170	6	Co-op		0	Co-op	0	Vacation
ENGW 3314 or 3315	4						
ARCH 5230 and ARCH 5231	4						
Elective	4						
		18	0	0	0	0	0

Year 5

Fall	Hours	Spring	Hours
ARCH 5115	6	ARCH 5120	6
ARCH 3370	4	ARCH 5220	4
ARCH 5310	4	Elective	4
Elective	4	Elective	4
		18	18

Total Hours: 142

¹ Advanced Architectural Communication (ARCH 3450) may also be taken in Summer 2 after your second or fourth year.

Architectural Studies, BS

Website (<https://camd.northeastern.edu/architecture/academic-programs/bs-architectural-studies>)

Undergraduate Program Coordinator

Amanda Lawrence, PhD
Associate Professor
am.lawrence@northeastern.edu
377 Ryder Hall

The Bachelor of Science in Architectural Studies teaches students the rigorous design methods of architecture while also offering a flexible curriculum focused on key contemporary topics related to the

built environment. After a common sequence of design, history, and technology courses, students may choose from a rich array of electives in the School of Architecture and throughout the university. The culmination of the major is a single capstone course required for all students.

Students will emerge with a strong portfolio, a foundational grounding in architectural design, and will be well equipped for further graduate education or work experience in design-related fields and creative industries. The Bachelor of Science in Architectural Studies can be completed in four years. Students in this major participate in one six-month co-op and have the option of a second four-month summer co-op. Students also have the option to study abroad for a semester.

Students may choose from one of three areas of emphasis—real estate; sustainability; or history, theory, and culture—or work with the department to put together a customized plan of study.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath Requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

NUpath Requirements Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Ethical Reasoning (ER) must be met through electives.

Architectural Studies Major Requirements

Code	Title	Hours
Architecture at Northeastern		
ARCH 1000	Architecture at Northeastern	
General Architecture and Studio		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 2130	Site, Space, and Program	6
ARCH 2140	Urban Institutions	6
ARCH 3170	Architecture, Infrastructure, and the City	6
Technology		
ARCH 2260	Introduction to Building Systems	4
History		
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 2330 and ARCH 2331	Architecture, Modernity, and the City, 1800 to 1910 and Recitation for ARCH 2330	4

ARCH 2340 and ARCH 2341	Architecture, Modernity, and the City, 1910 to 1980 and Recitation for ARCH 2340	4
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Capstone

ARCH 4960	Architectural Studies Capstone	4
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Major Electives

Students who wish to be considered for Northeastern's two-year Master of Architecture degree should take ARCH 2240 and ARCH 5230.

Code	Title	Hours
Complete six of the following elective courses. Please note: At least four courses must be taken in the School of Architecture. At least two must be above the 2000 level.		24

Any ARCH or LARC course

Real Estate

ENTR 2206	Global Social Enterprise	
ENTR 2301	Innovation!	
ENTR 2303	Entrepreneurial Marketing and Selling	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 4501	Business Planning for Technology Ventures	
MKTG 2209	Introduction to Marketing	

Sustainability

ENVR 3200	Water Resources	
ENVR 4515	Sustainable Development	
CIVE 1200	How Cities Work: Experiencing Urban Infrastructure	
CIVE 2334	Environmental Engineering 1	
CIVE 4566	Design for Sustainable Transportation: Netherlands	
SBSY 5100	Sustainable Design and Technologies in Construction	
SBSY 5200	Sustainable Engineering Systems for Buildings	
PHIL 1180	Environmental Ethics	

History, Theory, and Culture

ARTH 1100	Interactive Media and Society	
ARTH 2215	History of Graphic Design	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTH 5902	Special Topics in Art and Design History	
ARTG 5110	Information Design History	

*Please be aware: Not all courses are available every semester and some have prerequisites.

Optional Preparation for Two-Year Master of Architecture

Code	Title	Hours
If students wish to be eligible for the two-year Master of Architecture program at Northeastern, they should take the four courses listed here. ARCH 2240 and 5230 may count as electives toward the major:		
MATH 1241	Calculus 1	
PHYS 1141	General Physics	

ARCH 2240	Architectonic Systems
ARCH 5230	Structural Systems

Architectural Studies Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 1000	1	ARCH 1110	4	Elective	4	Vacation	
ENGW 1111	4	ARCH 1120	6	Elective	4		
ARCH 1310	4	EEAM 2000	1				
Elective	4	Elective	4				
Elective	4	Elective	4				
	17		19		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 2130	6	ARCH 2340 and ARCH 2341	4	Optional Summer Co- op		Optional Summer Co- op	
ARCH 2330 and ARCH 2331	4	ARCH 2140	6				
ARCH 2260	4	ENGW 3314	4				
Elective	4	Elective	4				
	18		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Semester in Segovia (or Boston)		Co-op	0	Co-op		Vacation	
ARCH 3155 or 3170	3.2						
ARCH 3361 (or Elective in Boston)	3.2						
ARCH 3362 (or Elective in Boston)	3.2						
ARCH 3363 (or Elective in Boston)	1.6						
ARCH 3363 (or Elective in Boston)	1.6						
ARCH 3440	1.6						
Language elective	1.6						
	16		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	ARCH 4960	4	Vacation		Vacation	
Elective	4	Elective	4				
Elective	4	Elective	4				

Elective	4	Elective	4		
	16		16	0	0

Total Hours: 128

Landscape Architecture, BLA

website (<https://camd.northeastern.edu/architecture/academic-programs/architecture-urban-landscape>)

Undergraduate Program Coordinator

Nicholas Brown, PhD
Associate Teaching Professor
nic.brown@northeastern.edu
539 Holmes Hall

Northeastern University offers a Bachelor of Liberal Arts in Urban Landscape. This new major reflects a growing public interest in making our cities more sustainable and in bringing the insights of landscape architects to join those of urban designers and architects. This hybrid field has deep roots in design, ecology, planning, and aesthetics. In the past 15 years, it has come to play an evermore important role in the design of new places, as well as the retrofitting of our older, postindustrial landscapes. An inherently interdisciplinary program, urban landscape will involve collaborations with other academic units on campus.

Major Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Societies and Institutions (SI), Analyzing and Using Data (AD), and Difference and Diversity (DD) are met through the major course requirements.

NUpath requirement Ethical Reasoning (ER) must be met through general electives.

Landscape Architecture Major Requirements

Code	Title	Hours
Introduction to College		
ARCH 1000	Architecture at Northeastern	1
Calculus		
MATH 1241	Calculus 1	4
Environmental Geology		
ENVR 1112	Environmental Geology	4
Foundation Courses		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1120	Fundamental Architectural Design	6

History/Theory Courses

ARCH 1310 and ARCH 1311	Architecture and Global Cultures, Prehistory to 1400 and Recitation for ARCH 1310	4
ARCH 3361	Architecture and Urbanism Abroad	4
ARCH 1320 and ARCH 1321	Architecture and Global Cultures, 1400 to Present and Recitation for ARCH 1320	4
ARCH 3362	Seminar Abroad	4
LARC 2330	Cities, Landscape, and Modern Culture	4
LARC 2340	Cities, Landscape, and Contemporary Culture	4
LARC 5310	Urban Landscape Seminar	4

Technology/Science Courses

ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
LARC 2230	Site Materials and Methods	4
LARC 2430	Plant Identification	4
LARC 2240	Sustainable Site Construction and Detailing	4
LARC 5210	Landscape Ecology	4
LARC 5220	Sustainable Landscape Practices	4
LARC 5420	Professional Practice in Landscape Architecture	4

Design

LARC 2130	Sustainable Urban Site Design	6
LARC 2140	Designed Urban Ecologies	6
LARC 2440	Planting Design	4
LARC 3155	Studio Abroad	6
LARC 3170	Landscape Planning and Urbanism Studio	6
LARC 5110	Advanced Design for Urban Environments Studio	6
LARC 5120	Comprehensive Design Studio	6

Professional Development

EEAM 2000	Professional Development for Co-op	1
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Cooperative Education

Urban landscape majors are required to complete two six-month co-ops. 0

COOP 3945	Co-op Work Experience	
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Major GPA Requirement

Minimum 2.500 GPA required

Major Credit Requirement

Complete 117 semester hours for the major.

Program Requirement

145 total semester hours required

Plan of Study**Five Years, Two Co-ops in Spring/Summer 1****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours
ARCH 1000	1	ARCH 1110	4	Vacation	
ARCH 1310 and ARCH 1311	4	ARCH 1120	6		
MATH 1241	4	ENGW 1111	4		
ENVR 1112	4	EEAM 2000	1		
Elective	4	Elective	4		
			17	19	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours
LARC 2130	6	LARC 2140	6	Vacation	
LARC 2430	4	LARC 2240	4		
LARC 2330	4	LARC 2440	4		
LARC 2230	4	LARC 2340	4		
			18	18	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours
ARCH 3155	6	Co-op 1		Co-op 1	
ARCH 3362	4				
ARCH 3361	4				
Language or cultural elective	4				
			18	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
LARC 3170	6	Co-op 2		Co-op 2	
ENGW 3314	4				
LARC 5210	4				
ENVR 3300 and ENVR 3301	5				
			19	0	0

Year 5

Fall	Hours	Spring	Hours
LARC 5110	6	LARC 5120	6
LARC 5220	4	LARC 5420	4
LARC 5310	4	Elective	4
Elective	4	Elective	4
		18	18

Total Hours: 145

Architecture and English, BS**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath attributes Natural and Designed World (ND), Creative Expression and Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

In order to graduate, students must complete Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Ethical Reasoning (ER) in their electives.

Architecture Requirements

Code	Title	Hours
Required Courses		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 1320	Architecture and Global Cultures, 1400 to Present	4
ARCH 1450	Understanding Design	4
ARCH 2130	Site, Space, and Program	6
ARCH 2240	Architectonic Systems	4
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
Electives		
Complete two of the following courses:		8
ARCH 3370	Topics in Architectural History	
ARCH 3450	Advanced Architectural Communication	
ARCH 5310	Design Tactics and Operations	

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity

ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement

ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
or ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	
ENGL 3375	Writing Boston	4

Program Requirement

128 total semester hours required

Architecture and Graphic and Information Design, BS

The School of Architecture and the Department of Art + Design offer a combined major in architecture and graphic and information design. Students interested in the combined major connect specific problem solving inherent to architectural understanding with the larger context of contemporary cities. They learn to conceptualize, synthesize, and represent complex architectural, urban, and environmental issues. Students combine this knowledge with the design of message and meaning, integrating text and image to visualize concepts and data to enhance human understanding of complex and vital knowledge.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath attributes Natural and Designed World (ND), Creative Expression and Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

In order to graduate, students must complete Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Ethical Reasoning (ER) in their electives.

Architecture Requirements

Code	Title	Hours
Required Courses		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 1320	Architecture and Global Cultures, 1400 to Present	4
ARCH 1450	Understanding Design	4
ARCH 2130	Site, Space, and Program	6
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	4
Electives		
Complete two of the following courses:		8
ARCH 3370	Topics in Architectural History	
ARCH 3450	Advanced Architectural Communication	
ARCH 5310	Design Tactics and Operations	

Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Art and Design Electives		
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	

ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1124)
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)
ARTG 3351	Time-Based Design
ARTG 3450	Graphic Design 2
ARTG 3460	Identity and Brand Design
ARTG 4552	Information Design 2
ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3

Integrative Requirement

Code	Title	Hours
ARTG 4551	Design Degree Project 2	4

Program Requirement

132 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or ARCH 1000	1	ARCH 1110	4	Vacation	0	Vacation	0
ARTG 1250	4	ARCH 1120	6				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 2220 (with optional ARTF 2221)	4				
ENGW 1111	4	ARCH 1320	4				
ARCH 1310	4						
		17		18		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 2130	6	ARCH 2340	4	Vacation	0	Vacation	0
ARTG 2250 (with optional ARTG 2251)	4	ARTG 2252	4				
ARTH 2210	4	ARCH 1450	4				
ARCH 2330	4	Elective	4				
		18		16		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Architecture elective	4	Co-op	0	Co-op	0	Vacation	0
ARTG 3350	4						
ARTH 2215	4						
ENGW 3314 or 3315	4						
EEAM 2000	1						
		17		0		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Architecture elective	4	Co-op	0	Co-op	0	Vacation	0
ARTG 3451	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ARTG 4550	4	ARTG 4551	4
Art and design elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 134

Architectural and Urban History, Minor

Website (<https://camd.northeastern.edu/architecture/academic-programs/architectural-history>)

The four-course minor introduces students to the study of architectural history, paying particular attention to the relationship between buildings and their larger urban, cultural, economic, and social environments. The minor includes one general survey class that covers a variety of different cultures and geographic contexts over time. Students may then choose from a suite of architectural history courses to fulfill the remaining 12 credits of this minor.

Please note: This minor is not available to students in the BS in architecture or BS in architectural studies major. BLA in landscape architecture students may double count at most one course with this minor.

Minor Requirements

Note: This minor is not available to students in the BS in architecture or BS in architectural studies major. BLA in landscape architecture students may double count at most one course with this minor.

Required Courses

Code	Title	Hours
Architectural History Core		
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
Electives		
Complete three of the following:		12
ARCH 1350	American Architecture	
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	
ARCH 3362	Seminar Abroad	
ARCH 3370	Topics in Architectural History	
ARCH 4850	Urban and Architectural History Abroad	

GPA Requirement

2.000 GPA required in the minor

Urban Landscape Studies, Minor

Website (<https://camd.northeastern.edu/architecture/academic-programs/urban-landscape-studies>)

The minor in urban landscape studies has two tracks, one for architecture majors and a second for students from other disciplines. The minor introduces fundamental design and management of sustainable urban environments, as well as an overview of historical and contemporary issues in urban landscape.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Requirements for Students Not Majoring in Architecture

Code	Title	Hours
Required Courses		
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 1320	Architecture and Global Cultures, 1400 to Present	4
LARC 2330	Cities, Landscape, and Modern Culture	4
LARC 2340	Cities, Landscape, and Contemporary Culture	4
Elective		
Complete one of the following:		4
ARCH 1450	Understanding Design	
ENVR 1200	Dynamic Earth	
ENVR 4515	Sustainable Development	
ENVR 5210	Environmental Planning	

Requirements for Architecture Majors

Code	Title	Hours
Required Courses		
LARC 2330	Cities, Landscape, and Modern Culture	4
LARC 2340	Cities, Landscape, and Contemporary Culture	4
LARC 5210	Landscape Ecology	4
Electives		
Complete two of the following, or a minimum of 8 semester hours:		8
ENVR 1112	Environmental Geology	
ENVR 3200	Water Resources	
ENVR 3300	Geographic Information Systems	
ENVR 4515	Sustainable Development	
ENVR 5210	Environmental Planning	
CIVE 2334	Environmental Engineering 1	
CIVE 4566	Design for Sustainable Transportation: Netherlands	
PHTH 5214	Environmental Health	

GPA Requirement

3.000 GPA required in the minor

Art + Design

Website (<https://camd.northeastern.edu/artdesign>)

Tad Hirsch, PhD

Chair

239 Ryder Hall

617.373.4340

Nhora Delgado, Administrative Assistant, n.delgado@northeastern.edu

Art makes life meaningful. Design makes life possible. Together they make life wonderful. The work of artists and designers informs and forms cultures, benefits society, and empowers the global marketplace of ideas. The faculty in the Department of Art + Design seeks to prepare students for a rich and rewarding life making a significant difference in the lives of others. We study the fundamentals of knowing, thinking, making, and doing; you have an opportunity to learn to use ideas and influences, tools and techniques, and principles and processes of art and design. We provide a faculty, format, and facilities for a great experiential education in art and design within a major urban research university. You pursue your curiosity about, intentions toward, and obligations to the evolving world. Summer programs in Iceland, Ireland, Venice, Rome, Berlin, Budapest, Cuba, and Ecuador offer intensive studio experiences to augment your study with travel and creative work in the context of other cultures.

Whether you are studying design, media art, or game design, the Department of Art + Design seeks to cultivate your talents as a source of original ideas and expressions of an inner life, using classical, current, and emerging media. You are inspired and challenged to create powerful new works. You will gain visual literacy and fluency with professional art, design, and game design practices in the context of a liberal arts education. You can be transformed into a creative force, ready to realize your potential and create cultural value and social benefit.

Art, BA

A studio-based fine art program that offers a broad and deep exploration of what it means to be culturally aware, skilled, and productive, the Bachelor of Arts in Art balances studio courses in drawing/painting and digital media with art history and visual studies. Students' education, experience, and training in understanding cultural practices take full advantage of the remarkable scope of the College of Arts, Media and Design. The focus of obtaining a well-rounded liberal arts education, within a broad study of the arts and humanities, is complemented by the study of a language and its cultural context and knowledge in the natural, physical, and social sciences. Some courses in this program are offered in Ireland, a cultural treasure house amid natural splendor, where students have an intensive and immersive experience. There, students make art in their own studios in an art school equipped with all the tools and resources an artist requires. Most important, ample elective choices include study-abroad programs and span the complete range of offerings of our college.

The concentration in visual studies incorporates art and design history with a cultural study of seeing. Understanding vision to be as much a product of lived culture and a phenomenon that is as dynamic, creative, and social as it is physical and biological, visual studies explores differing ways to interpret the visible world that surrounds us. Students are exposed to the history and theory of the visual arts and visual experience as they address connections between topics as wide-ranging

as Leonardo da Vinci's *Mona Lisa* and the computer interface used in Apple's *Lisa*. Visual studies seeks to develop critical insight into, and understanding of, what is seen.

The **Bachelor of Arts in Art** is offered with a concentration in visual studies or without a concentration.

Design, BFA

Design is the practice-based discipline raising important questions about—and providing significant answers to—how we live. Designers are needed when we don't know what is needed. Designers propose alternative futures and create new choices using design principles and processes to create, compose, and construct meaning in diverse knowledge fields. Designers seek a broad understanding of principles and systems of perception, communication, and action. Concentrations in design practices are graphic and information design, interaction design, and experience design.

Graphic design makes messages and meaning using visual form and the integration of text and image. It often has a persuasive intention and uses rules of visual composition, form, and pattern to enable storytelling or to create attention and an ambiance for consideration. Information design focuses on visualizing concepts and data to enhance human understanding of complex and vital knowledge.

Interaction design focuses on the creation of navigable interfaces and systems that allow audiences to achieve meaningful goals, connecting people to people and people to information and environments.

Experience design is a holistic approach that utilizes investigation into human environments in specific situations to improve quality. Given an understanding of goals, needs, and desires, it seeks to improve the various contexts by identifying and studying events and how they can be turned into beneficial practices.

As intensive studio programs, the curricula balance theory and design history and theory with studio projects in all media. As a design analyst, inventor, interpreter, curator, and producer of information, interaction, and experience, students can integrate many facets of university and liberal arts education.

The **Bachelor of Fine Arts in Design** is offered with the following concentration options: experience design, interaction design, or graphic and information design.

Games, BFA

The Bachelor of Fine Arts in Games seeks to give students the skills to communicate ideas and emotions through interactive media. The focus of the BFA degree is to explore games as an aesthetic and expressive form through critical analysis and creative, reflective practice. To reflect emerging trends in the video game industry, including broader platforms and audiences and more distribution channels, students will be oriented toward developing games and playful media in an independent creative context, preparing graduates to become leaders within a growing segment of the game industry. Curriculum is geared to cultivating the students' own unique creative voice through courses that apply theory analysis to game-making practice across a wide range of media. Students are exposed to a wide variety of genres and contexts, as well as different ways of thinking about games content, platforms, and production. BFA in games majors will have a minimum of four games courses in which they interact with and collaborate with students in the BS in computer science and game development major.

Media Arts, BFA

The continuing revolution in digital computing and global communications has produced a rapidly evolving field for artists who create experiences of image and form with computer screens, intelligent devices, and new materials. Artists also invent tools for exploring, creating, and distributing their ideas and works. Media arts practices of animation, game, game art, photography, and video arts are offered with variations yet to be invented.

Courses in imaginative and narrative arts, required for professional work in documentary films, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated film are offered. An intensive studio program, the curriculum provides knowledge, experience, and techniques of media arts informed by theory, experimentation, and critique. Extensive digital imaging and interactive media editing and production facilities offer the opportunity to become highly proficient in the current skills and emerging practices necessary for remarkable work. The media arts are evolving and expanding their reach into culture and society in daily life and global experience. The revolutions in 3-D printing, embedded devices, and robotics are changing the landscape in which the media artist will operate. This degree prepares students to meet the challenges of continuous change with adaptive ingenuity.

The **Bachelor of Fine Arts in Media Arts** is offered without a concentration or with the following concentration options: animation, photography, or video arts.

Studio Art, BFA

The Bachelor of Fine Arts in Studio Art is offered in partnership with the School of the Museum of Fine Arts at Tufts University (SMFA at Tufts) (<https://smfa.tufts.edu>), adjacent to the Northeastern campus. In this major, the studio art classes are taken at the SMFA at Tufts, which permits students to explore a wide range of artistic media including ceramics, drawing, film, glasswork, metalsmith, painting, performance, print and paper, sculpture, and sound in their extensive studio environments. Art and design history courses are taken in the department. In addition, students have access to all the elective courses, co-op, study-abroad programs, technology, and student resources that Northeastern students experience.

The **Bachelor of Fine Arts in Studio Art** degree is awarded by Northeastern.

Preapproved Template Programs

The Department of Art + Design offers preapproved template programs in the following areas:

- Experience design
- Game design
- Graphic and information design
- Interaction design
- Media arts
- Visual studies

Each template program may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<https://registrar.northeastern.edu/article/combined-majors>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on

preapproved template programs, see “Student-Requested Combined Major (p. 33).” For template program requirements, visit myNortheastern (<https://my.northeastern.edu/welcome>), click on the “Self-Service” tab, then on “My Degree Audit.”

Admission Requirements for Art + Design

There are specific admissions criteria for students entering majors in the Department of Art + Design. See “Admission Requirements for the College of Arts, Media and Design (p. 14).”

Academic Progression Standards

Same as college standards.

Programs

Bachelor of Arts (BA)

- Art (p. 62)
- Communication Studies and Graphic and Information Design (p. 87)
- English and Graphic and Information Design (p. 89)
- Media and Screen Studies and Media Arts (p. 98)
- Media Arts and Communication Studies (p. 100)
- Theatre and Interaction Design (p. 102)

Bachelor of Fine Arts (BFA)

- Design (p. 64)
- Games (p. 67)
- Media Arts (p. 68)
- Studio Art (p. 73)
- Game Art and Animation (p. 92)

Bachelor of Science (BS)

- Architecture and Graphic and Information Design (p. 57)
- Business Administration and Design (p. 76)
- Computer Science and Design (p. 80)
- Computer Science and Game Development (p. 83)
- Computer Science and Media Arts (p. 84)
- Game Design and Music with concentration in Music Technology (p. 94)
- Graphic and Information Design and Mathematics (p. 95)
- Journalism and Interaction Design (p. 96)
- Theatre and Interaction Design (p. 103)

Minors

- Animation (p. 105)
- Art (p. 105)
- Art History (p. 106)
- Experience Design (p. 106)
- Game Art (p. 107)
- Game Design (p. 107)
- Graphic and Information Design (p. 108)
- Interaction Design (p. 108)
- Photography (p. 109)
- Photojournalism (p. 109)
- Video Arts (p. 109)

Art, BA

A studio-based fine art program that offers a broad and deep exploration of what it means to be culturally aware, skilled, and productive, the Bachelor of Arts in Art balances studio courses in drawing/painting and digital media with art history and visual studies. Students' education, experience, and training in understanding cultural practices take full advantage of the remarkable scope of the College of Arts, Media and Design. The focus of obtaining a well-rounded liberal arts education, within a broad study of the arts and humanities, is complemented by the study of a language and its cultural context and knowledge in the natural, physical, and social sciences. Some courses in this program are offered in Ireland, a cultural treasure-house amid natural splendor, where students may have an intensive and immersive experience. There students make art in their own studios in an art school equipped with all the tools and resources an artist requires. Most important, ample elective choices include study-abroad programs and span the complete range of offerings of our college.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) must be met through general electives.

Art and Design Core

Code	Title	Hours
Introduction to College		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
Drawing Fundamentals Elective		

ARTF 1120	Observational Drawing	4
or ARTF 1121	Conceptual Drawing	
Art and Design History		
ARTH 1110	Global Art and Design History: Ancient to Medieval	4
ARTH 1111	Global Art and Design History: Renaissance to Modern	4
ARTH 2210	Modern Art and Design History	4
ARTH 2211	Contemporary Art and Design History	4
Degree Project		
ARTD 4530	Media Arts Degree Project 1	4
ARTD 4670	Media Arts Degree Project 2	4

Concentration or Electives

Complete the following concentration or the elective section below:

- Concentration in Visual Studies (p. 63)

Code	Title	Hours
Arts, Media and Design Electives		
Complete four courses from the following lists:		16
<i>Art + Design</i>		
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTH 1100	Interactive Media and Society	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTD 2100	Narrative Basics	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 5582	Collaborative Video and Community Engagement	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTG 1250	Design Process Context and Systems	
ARTG 2250	Typography 1 (with optional ARTG 2251)	
ARTG 2252	Graphic Design 1	
ARTE 2301	The Graphic Novel	

ARTE 2500	Art and Design Abroad: Studio
ARTE 2501	Art and Design Abroad: History
ARTE 3901	Art and Design Special Topics
ARTE 4901	Special Topics in Art and Design Studio

Architecture

ARCH 1310 and ARCH 1311	Architecture and Global Cultures, Prehistory to 1400 and Recitation for ARCH 1310
ARCH 1320 and ARCH 1321	Architecture and Global Cultures, 1400 to Present and Recitation for ARCH 1320
ARCH 1350	American Architecture
ARCH 1450	Understanding Design
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980

Communication Studies

COMM 1101	Introduction to Communication Studies
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Game Design

GAME 1110	Games and Society
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Journalism

JRNL 1150	Understanding Today's News
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Media and Screen Studies

MSCR 1220	Media, Culture, and Society
MSCR 1230	Introduction to Film Production
MSCR 1310	Introduction to Digital Media Culture
MSCR 2220	Understanding Media and Film
CINE 2336	American Film and Culture

Music

MUSC 1109	Introduction to Art, Drama, and Music
MUSC 1113	Film Music

Theatre

THTR 1101	Introduction to Theatre
THTR 1270	Introduction to Theatrical Design

Major GPA Requirement

A major GPA of 2.500 is required.

Program Requirement

129 total semester hours required

Concentration in Visual Studies

Code	Title	Hours
Art and Design History Electives		
Courses in architectural history and media and screen studies may also be used upon approval by the chair of the Department of Art + Design.		
Complete four of the following:		16
ARTE 2501	Art and Design Abroad: History	
ARTH 1100	Interactive Media and Society	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 2213	Nineteenth-Century Art	
ARTH 2215	History of Graphic Design	
ARTH 5100	Contemporary Art Theory and Criticism	

ARTH 5200	Issues in Contemporary Art
ARTH 5400	Contemporary Visual Culture

Plan of Study

Sample Five Years, Two Co-ops in Summer 2/Fall Sample. YA or ZA Plan of Study optional.

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1124 (with optional ARTF 1125)	4	Vacation	0	Vacation	0
ARTF 1122 (with optional ARTF 1123)	4	ARTH 1111	4				
ARTH 1110	4	Elective	4				
Arts, media and design elective	4	Elective	4				
Elective	4						
		17				0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1120 or 1121	4	ARTF 2220 (with optional ARTF 2221)	4	Vacation	0	Co-op	0
ARTH 2210	4	ARTH 2211	4				
Arts, media and design elective	4	Arts, media and design elective	4				
Elective	4	Elective	4				
		EEAM 2000				1	
		16				17	
						0	
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ARTF 2223 (with optional ARTF 2224)	4	Vacation	0	Co-op	0
		Elective				4	
		Elective				4	
		Elective				4	
		0				16	
						0	
						0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Arts, media and design elective	4	Vacation	0	Vacation	0
		Elective				4	
		Elective				4	
		Elective				4	
		0				16	
						0	
						0	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTD 4530	4	ARTD 4670	4				

Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Design, BFA

Design is the practice-based discipline raising important questions about—and providing significant answers to—how we live. Designers are needed when we don't know what is needed. Designers propose alternative futures and create new choices using design principles and processes to create, compose, and construct meaning in diverse knowledge fields. Designers seek a broad understanding of principles and systems of perception, communication, and action. Concentrations in design practices are graphic and information design, interaction design, and experience design.

Graphic design makes messages and meaning using visual form and the integration of text and image. It often has a persuasive intention and uses rules of visual composition, form, and pattern to enable storytelling or to create attention and an ambience for consideration. Information design focuses on visualizing concepts and data to enhance human understanding of complex and vital knowledge.

Interaction design focuses on the creation of navigable interfaces and systems that allow audiences to achieve meaningful goals, connecting people to people and people to information and environments.

Experience design is a holistic approach that utilizes investigation into human environments in specific situations to improve quality. Given an understanding of goals, needs, and desires, it seeks to improve the various contexts by identifying and studying events and how they can be turned into beneficial practices.

As intensive studio programs, the curricula balance theory and design history and theory with studio projects in all media. As a design analyst, inventor, interpreter, curator, and producer of information, interaction, and experience, students can integrate many facets of university and liberal arts education.

Program Requirements - All Concentrations

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements. All other NUpath requirements must be met through electives.

Art and Design Core

Code	Title	Hours
Introduction to College		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
Art and Design History		
ARTH 1111	Global Art and Design History: Renaissance to Modern	4
ARTH 2210	Modern Art and Design History	4
ARTH 2211	Contemporary Art and Design History	4

Design Requirements

Code	Title	Hours
Design Courses		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
Complete one of the following:		8
ARTG 4550 and ARTG 4551	Design Degree Project 1 and Design Degree Project 2	
ARTG 4700 and ARTG 4701	Interaction Team Degree Project 1 and Interaction Team Degree Project 2	

Design Electives

Code	Title	Hours
Art and Design Elective		
Complete one of the following:		4
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTD 2100	Narrative Basics	
ARTE 3901	Art and Design Special Topics	
Design History Elective		
ARTH 1100 or ARTH 2215	Interactive Media and Society History of Graphic Design	4
Media Arts Basics Elective		
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	

Concentrations

Complete one of the concentrations listed below:

- Graphic and Information Design (p.)
- Interaction Design (p.)
- Experience Design (p.)

Program Requirements

129 total semester hours required

Concentrations

CONCENTRATION IN GRAPHIC AND INFORMATION DESIGN

Code	Title	Hours
Required Courses		
ARTG 2252	Graphic Design 1	4
ARTG 3450	Graphic Design 2	4
Electives		
Complete four of the following:		16
ARTE 3901	Art and Design Special Topics	
ARTE 5901	Special Topics in Art and Design Studio	
ARTG 2260	Programming Basics	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3460	Identity and Brand Design	
ARTG 3462	Experience Design 1	
ARTG 3700	Interaction Design 2: Mobile	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

CONCENTRATION IN INTERACTION DESIGN

Code	Title	Hours
Required Courses		
ARTG 2252	Graphic Design 1	4
ARTG 2260	Programming Basics	4
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
ARTG 3700	Interaction Design 2: Mobile	4
Electives		
Complete two of the following:		8
ARTE 3901	Art and Design Special Topics	
ARTE 5901	Special Topics in Art and Design Studio	
ARTG 3250	Physical Computing	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 3462	Experience Design 1	
ARTG 3463	Experience Design 2	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

CONCENTRATION IN EXPERIENCE DESIGN

Code	Title	Hours
Required Courses		
ARTG 2260	Programming Basics	4

ARTG 3462	Experience Design 1	4
ARTG 3463	Experience Design 2	4

Electives

Complete three of the following:			12
ARTG 2252	Graphic Design 1		
ARTG 3250	Physical Computing		
ARTG 3351	Time-Based Design		
ARTG 3450	Graphic Design 2		
ARTG 3460	Identity and Brand Design		
ARTG 3700	Interaction Design 2: Mobile		
ARTG 4552	Information Design 2		
ARTG 4553	Environmental Information Design		
ARTG 4554	Typography 3		
ARTE 3901	Art and Design Special Topics		
ARTE 5901	Special Topics in Art and Design Studio		

Plan of Study - Experience Design

Sample Five Years, Two Co-ops in Spring/Summer 1. YA or ZA Plan of Study optional.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1124 (with optional ARTF 1125)	4	Vacation		Vacation	
ARTG 1250	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTH 2210	4				
ARTH 1111	4	Elective	4				
Elective	4						
		17			16		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2220 (with optional ARTF 2221)	4	ARTG 3462	4	Vacation		Vacation	
ARTF 2223 (with optional ARTF 2224)	4	ARTG 2260	4				
ARTH 2211	4	Design history elective	4				
Elective	4	Elective	4				
		16			16		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 3350	4	Co-op		Co-op		Vacation	
ARTG 3463	4						

Art and design elective	4				
Elective	4				
EEAM 2000	1				
	17	0	0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 3451	4	Co-op	0	Co-op	0	Vacation	
Design elective	4						
Media arts elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ARTG 4550 or 4700	4	ARTG 4551 or 4701	4
Design elective	4	Design elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Plan of Study - Graphic and Information Design
Sample Five Years, Two Co-ops in Spring/Summer 1. YA or ZA
Plan of Study optional.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1124 (with optional ARTF 1125)	4	Vacation		Vacation	
ARTG 1250	4	ARTG 2250 (with optional ARTF 2251)	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTH 2210	4				
ARTH 1111	4	Elective	4				
Elective	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2220 (with optional ARTF 2221)	4	ARTF 2223 (with optional ARTF 2224)	4	Vacation		Vacation	
ARTH 2211	4	ARTG 3350	4				
ARTG 2252	4	Design history elective	4				

Elective	4	Elective	4		
	16		16	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 3450	4	Co-op		Co-op		Vacation	
ARTG 3451	4						
Media arts elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Design elective	4	Co-op	0	Co-op	0	Vacation	
Design elective	4						
Art and design elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ARTG 4550 or 4700	4	ARTG 4551 or 4701	4
Design elective	4	Design elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Plan of Study - Interaction Design
Sample Five Years, Two Co-ops in Spring/Summer 1. YA or ZA
Plan of Study optional.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1124 (with optional ARTF 1125)	4	Vacation		Vacation	
ARTG 1250	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTH 2210	4				
ARTH 1111	4	Elective	4				
Elective	4						
	17		16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2220 (with optional ARTF 2221)	4	ARTG 2252	4	Vacation		Vacation	
ARTF 2223 (with optional ARTF 2224)	4	ARTG 2400 (with optional ARTG 2401)	4				
ARTH 2211	4	ARTG 3350	4				
Elective	4	Elective	4				
	16		16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 2260	4	Co-op		Co-op		Vacation	
ARTG 3451	4						
Design history elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 3700	4	Co-op	0	Co-op	0	Vacation	
Art and design elective	4						
Media arts elective	4						
Elective	4						
	16		0		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 4550 or 4700	4	ARTG 4551 or 4701	4				
Design elective	4	Design elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				

Total Hours: 130

Games, BFA

The BFA in games seeks to give students the skills to communicate ideas and emotions through interactive media. The focus of the BFA degree is to explore games as an aesthetic and expressive form through critical analysis and creative, reflective practice. To reflect emerging trends in the video game industry, including broader platforms and audiences and more distribution channels, students will be oriented toward developing games and playful media in an independent creative context, preparing graduates to become leaders within a growing segment of the game industry. Curriculum is geared to cultivating the students' own unique creative voice through courses that apply theory analysis to game-making practice across a wide range of media. Students are exposed

to a wide variety of genres and contexts, as well as different ways of thinking about games content, platforms, and production. BFA in games majors will be based in the College of Arts, Media and Design but will have a minimum of four games courses in which they interact with and collaborate with students in the BS in computer science and game development major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), and Analyzing/Using Data (AD) are met through the major course requirements. All other NUpath requirements must be met through electives.

Games Major Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Foundation		
GAME 1110	Games and Society	4
GAME 2500	Foundations of Game Design	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
MATH 1260	Math Fundamentals for Games	4
ARTG 2260	Programming Basics	4
Art History Foundation		
	Complete one art history course within the ARTH subject code.	4
Game		
GAME 1850	Experimental Game Design	4
GAME 2650	Introduction to Game Research Methods	4
GAME 2750	Games Criticism and Theory	4
GAME 2950	Game Studio	4
GAME 3700	Rapid Idea Prototyping for Games	4
Entrepreneurship		
ENTR 2301	Innovation!	4
GAME 2010	The Business of Games	4
GAME 3800	Game Concept Development and Production	4
ENTR 3305	Entrepreneurial Strategy and Business Model Design	4
Capstone		
	A grade of C or higher is required:	

GAME 4700	Game Design Capstone 1	4
GAME 4701	Game Design Capstone 2	4
Critical Making		
Complete one of the following:		4
GAME 2755	Games and Social Justice	
GAME 2355	Narrative for Games	
GAME 3055	Playful Design	
Creative Making		
Complete one of the following:		4
ARTG 3250	Physical Computing	
GAME 4155	Designing Imaginary Worlds	
Game Electives		
Complete three GAME courses.		12

Games Major Credit/GPA Requirement

Complete 94 semester hours for the major with a 2.000 GPA.

Program Requirement

128 total semester hours required

Plan of Study

Sample Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 2223 (with optional ARTF 2224)	4	Vacation	0	Vacation	0
ARTF 1122 (with optional ARTF 1123)	4	GAME 1110	4				
GAME 2500	4	MATH 1260	4				
Art history elective	4	Elective	4				
ENGW 1111	4						
		17	16	0	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 2260	4	GAME 2350 (Pending Approval)	4	Vacation		Vacation	
GAME 1850	4	GAME 2650	4				
GAME 2010	4	GAME 2750	4				
GAME 3700	4	GAME 2950	4				
		16	16	0	0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
GAME 3800	4	Creative making elective	4	Vacation		Vacation	
Critical making elective	4	GAME elective	4				
GAME elective	4	Elective	4				

Elective	4	Elective	4		
		16	16	0	0
Year 4					
Fall	Hours	Spring	Hours	Spring	Hours
GAME 4700	4	GAME 4701	4		
ENTR 2301	4	ENTR 3305	4		
GAME elective	4	Elective	4		
Elective	4	Elective	4		
		16	16		

Total Hours: 129

Media Arts, BFA

The continuing revolution in digital computing and global communications has produced a rapidly evolving field for artists who create experiences of image and form with computer screens, intelligent devices, and new materials. Artists also invent tools for exploring, creating, and distributing their ideas and works. Media arts practices of animation, game, game art, photography, and video arts are offered with variations more yet to be invented.

Courses in imaginative and narrative arts, required for professional work in documentary films, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated film, are offered. An intensive studio program, the curriculum provides knowledge, experience, and techniques of media arts informed by theory, experimentation, and critique. Extensive digital imaging and interactive media editing and production facilities afford you the opportunity to become highly proficient in the current skills and emerging practices necessary for remarkable work. The media arts are evolving and expanding their reach into culture and society in daily life and global experience. The revolutions in 3-D printing, embedded devices, and robotics are changing the landscape in which the media artist will operate. This degree is designed to prepare students to meet the challenges of continuous change with adaptive ingenuity.

Video arts is a multidisciplinary field focused on creative video expression and messaging that weaves together art and design foundations; art and design history; video production; cinematic language (including documentary, narrative, and experimental strategies); collaborative frameworks; and theories of social and cultural change. The scope of the video arts curriculum is a broader and more diverse tapestry than traditional video art and it reflects the dynamic evolution of video in multiple contexts. The video arts concentration enables students to explore traditional, alternative, and other artistic means of video art production in a variety of creative and technical contexts. The focus on a multiplicity of artistic formats—hence, the choice of the title video arts—underscores our attention to the training of students who are interested in learning how to experiment with new technical, narrative, and aesthetic practices and incorporate these options into the traditional medium of video art.

Program Requirements - All Concentrations

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression and Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) must be met through general electives.

Art and Design Core

Code	Title	Hours
Introduction to College		
ARTF 1000	Art and Design at Northeastern	1

Art and Design Fundamentals

ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4

Art and Design History

ARTH 1110	Global Art and Design History: Ancient to Medieval	4
ARTH 1111	Global Art and Design History: Renaissance to Modern	4
ARTH 2210	Modern Art and Design History	4

Media Arts Requirements

Code	Title	Hours
Drawing Fundamentals Elective		
ARTF 1120 or ARTF 1121	Observational Drawing Conceptual Drawing	4

Media Arts Basics Elective

Note: If you are pursuing a concentration, select courses not used for your concentration.

Complete one of the following: 4		
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	

Media Arts History Elective

Complete one of the following: 4		
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 1100	Interactive Media and Society	

Design Requirement

ARTG 2250	Typography 1 (with optional ARTG 2251)	4
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Degree Project		
ARTD 4530	Media Arts Degree Project 1	4
ARTD 4670	Media Arts Degree Project 2	4

Media Arts Electives or Concentration

Complete the media arts electives or contact your academic advisor to declare one of the following concentrations:

- Animation (p. 70)
- Photography (p. 70)
- Video Arts (p. 70)

Code	Title	Hours
Note: Courses in this requirement may not be used for the drawing fundamentals elective or media arts history elective.		

Complete six of the following:		24
ARTE 2301	The Graphic Novel	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 1100	Interactive Media and Society	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTD 2100	Narrative Basics	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTD 4565	Photography 2	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 5582	Collaborative Video and Community Engagement	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTG 2300	Business Literacy for Design and Media	
ARTG 3351	Time-Based Design	

Program Requirement

130 total semester hours required

Concentrations (Animation/Photography/Video Arts)**CONCENTRATION IN ANIMATION**

Code	Title	Hours
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Animation Requirements

ARTD 2100	Narrative Basics	4
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
ARTD 3470	Animation 1	4
ARTD 4570	Animation 2	4

Animation Electives

Complete two of the following: 8

ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 3473	Animation for Games	

Art and Design Elective

Note: Courses in this requirement may not be used for the drawing fundamentals elective, media arts basics elective, media arts history elective, or animation electives.

Complete one of the following: 4

ARTE 2301	The Graphic Novel	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTF 1121	Conceptual Drawing	
ARTH 1100	Interactive Media and Society	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTD 3460	Photography 1	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTG 2252	Graphic Design 1	
ARTG 2300	Business Literacy for Design and Media	
ARTG 3351	Time-Based Design	

CONCENTRATION IN PHOTOGRAPHY

Code	Title	Hours
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Photography Requirements

ARTD 2360	Photo Basics (with optional ARTD 2361)	4
ARTD 3460	Photography 1	4
ARTD 4565	Photography 2	4

Photography Elective

ARTD 4660 or ARTD 4661	Studio Photography Alternative Photographic Processes	4
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Art and Design Electives

Note: Courses in this requirement may not be used for the drawing fundamentals elective, media arts basics elective, media arts history elective, or photography elective.

Complete two of the following: 8

ARTD 2100	Narrative Basics	
ARTE 2301	The Graphic Novel	
ARTG 2300	Business Literacy for Design and Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 5582	Collaborative Video and Community Engagement	
ARTG 2252	Graphic Design 1	
ARTG 3351	Time-Based Design	
ARTD 3473	Animation for Games	
ARTH 1100	Interactive Media and Society	

CONCENTRATION IN VIDEO ARTS

Code	Title	Hours
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Video Arts Requirements

ARTD 2380	Video Basics (with optional ARTD 2381)	4
ARTD 3480	Video: Sound and Image	4
ARTD 5582	Collaborative Video and Community Engagement	4

Video Arts Electives

Complete three of the following: 12

ARTD 3485	Experimental Video	
CINE 2160	Narrative Filmmaking	
CINE 3446	Topics in Documentary Production	
CINE 3389	Screenwriting	
ARTH 2212	Survey of the Still and Moving Image	
THTR 2345	Acting for the Camera	

Art and Design Electives

Note: Courses in this requirement may not be used for the drawing fundamentals elective, media arts basics elective, and media arts history elective.

Complete two of the following: 8

ARTD 2100	Narrative Basics
ARTE 2301	The Graphic Novel
ARTG 2300	Business Literacy for Design and Media
ARTE 2500	Art and Design Abroad: Studio
ARTE 2501	Art and Design Abroad: History
ARTE 3901	Art and Design Special Topics
ARTE 4901	Special Topics in Art and Design Studio
ARTH 2213	Nineteenth-Century Art
ARTH 5100	Contemporary Art Theory and Criticism
ARTH 5200	Issues in Contemporary Art
ARTH 5400	Contemporary Visual Culture
ARTS 2330	Sculpture Basics
ARTS 2340	Painting Basics
ARTS 2341	Figure Drawing
ARTS 3449	Drawing in Mixed Media
ARTD 3470	Animation 1
ARTD 3471	Virtual Environment Design
ARTD 3472	Character Design for Animation
ARTD 4565	Photography 2
ARTD 4570	Animation 2
ARTD 4575	Animation 3
ARTD 4577	Digital Sculpture and Model Making
ARTG 2252	Graphic Design 1
ARTG 3351	Time-Based Design
ARTD 3473	Animation for Games
ARTH 1100	Interactive Media and Society

Media arts basics elective	4	Elective	4				
Elective	4	Elective	4				
		16		16		0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 2250 (with optional ARTG 2251)	4	Co-op		Co-op		Vacation	
Media arts elective	4						
Elective	4						
Elective	4						
EEAM 2000	1						
		17		0		0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media arts elective	4	Co-op		Co-op		Vacation	
Media arts elective	4						
Elective	4						
Elective	4						
		16		0		0	0

Year 5

Fall	Hours	Spring	Hours
ARTD 4530 or ARTG 4700	4	ARTD 4670 or ARTG 4701	4
Media arts elective	4	Media arts elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 130

Plan of Study - No Concentration

Sample Five Years, Two Co-ops in Spring/Summer 1/Sample. ZA Plan of Study only.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1122 (with optional ARTF 1123)	4	Vacation		Vacation	
ARTF 1124 (with optional ARTF 1125)	4	ARTF 2220 (with optional ARTF 2221)	4				
ARTH 1110	4	ARTH 1111	4				
Drawing fundamentals elective	4	Elective	4				
Elective	4						
		17		16		0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2223 (with optional ARTF 2224)	4	Media arts history elective	4	Vacation		Vacation	
ARTH 2210	4	Media arts elective	4				

Plan of Study - Animation

Sample Five Years, Two Co-ops in Spring/Summer 1/Sample. ZA Plan of Study Only.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1122 (with optional ARTF 1123)	4	Vacation		Vacation	
Drawing fundamentals elective	4	ARTF 2220 (with optional ARTF 2221)	4				
ARTF 1124 (with optional ARTF 1125)	4	ARTH 1111	4				
ARTH 1110	4	Elective	4				

Elective	4					
	17	16	0	0		
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTF 2223 (with optional ARTF 2224)	4	ARTD 2100	4	Vacation		Vacation
ARTD 2370 (with optional ARTD 2371)	4	ARTD 3470	4			
ARTH 2210	4	Media arts history elective	4			
Elective	4	Elective	4			
	16	16	0	0		
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTD 4570	4	Co-op		Co-op		Vacation
ARTG 2250 (with optional ARTG 2251)	4					
Media arts basics elective	4					
Elective	4					
EEAM 2000	1					
	17	0	0	0		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Animation elective	4	Co-op		Co-op		Vacation
Art and design elective	4					
Elective	4					
Elective	4					
	16	0	0	0		0
Year 5						
Fall	Hours	Spring	Hours			
ARTD 4530 or ARTG 4700	4	ARTD 4670 or ARTG 4701	4			
Animation elective	4	Elective	4			
Elective	4	Elective	4			
Elective	4	Elective	4			
	16	16				

Total Hours: 130

Plan of Study - Photography

Sample Five Years, Two Co-ops in Spring/Summer 1/Sample. ZA Plan of Study Only.

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTF 1000	1	ARTH 1111	4	Vacation		Vacation
ARTH 1110	4	ARTF 1122 (with optional ARTF 1123)	4			
ARTF 1124 (with optional ARTF 1125)	4	ARTF 2220 (with optional ARTF 2221)	4			
Drawing fundamentals elective	4	Elective	4			
Elective	4					
	17	16	0	0		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTF 2223 (with optional ARTF 2224)	4	ARTD 3460	4	Vacation		Vacation
ARTD 2360 (with optional ARTD 2361)	4	Media arts basics elective	4			
ARTH 2210	4	Elective	4			
Elective	4	Elective	4			
	16	16	0	0		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTD 4565	4	Co-op		Co-op		Vacation
ARTG 2250 (with optional ARTG 2251)	4					
Art and design elective	4					
Elective	4					
EEAM 2000	1					
	17	0	0	0		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Media arts history elective	4	Co-op		Co-op		Vacation
Photography elective	4					
Elective	4					
Elective	4					
	16	0	0	0		0

Year 5

Fall	Hours	Spring	Hours
ARTD 4530 or ARTG 4700	4	ARTD 4670 or ARTG 4701	4
Elective	4	Art and design elective	4
Elective	4	Elective	4
Elective	4	Elective	4
16		16	

Total Hours: 130

Plan of Study - Video Arts**Sample Five Years, Two Co-ops in Spring/Summer 1/Sample. ZA Plan of Study Only.****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	ARTF 1122 (with optional ARTF 1123)	4	Vacation		Vacation	
ARTF 1124 (with optional ARTF 1125)	4	ARTF 2220 (with optional ARTF 2221)	4				
ARTH 1111	4	ARTH 1110	4				
Elective	4	Elective	4				
Elective	4						
17		16		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2223 (with optional ARTF 2224)	4	Video arts elective	4	Vacation		Vacation	
ARTD 2380 (with optional ARTD 2381)	4	Drawing fundamentals elective	4				
ARTH 2210	4	Media arts history elective	4				
Elective	4	Elective	4				
16		16		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTD 3480	4	Co-op		Co-op		Vacation	
ARTG 2250 (with optional ARTG 2251)	4						
Media arts basics elective	4						
Elective	4						
EEAM 2000	1						
17		0		0		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTD 5582	4	Co-op		Co-op		Vacation	
Art and design elective	4						
Video arts elective	4						
Elective	4						
16		0		0		0	

Year 5

Fall	Hours	Spring	Hours
ARTD 4530	4	ARTD 4670	4
Video arts elective	4	Art and design elective	4
Elective	4	Elective	4
Elective	4	Elective	4
16		16	

Total Hours: 130

Studio Art, BFA

The BFA in studio art is offered in partnership with the School of the Museum of Fine Arts at Tufts University (SMFA at Tufts), affiliated with Tufts University and located adjacent to the Northeastern campus. In this major, the studio art classes are taken at the SMFA at Tufts, which permits students to explore a wide range of artistic media including ceramics, drawing, film, glasswork, metalsmith, painting, performance, print and paper, sculpture, and sound in their extensive studio environments. Art and design history courses are taken at Northeastern. In addition, students have access to all the elective courses, co-op, study-abroad programs, technology, and student resources that Northeastern students experience.

The BFA in studio art degree is awarded by Northeastern.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) must be met through general electives.

Note: The BFA in studio art is a joint degree program offered in collaboration with the School of the Museum of Fine Arts at Tufts University (SMFA at Tufts), which is affiliated with Tufts University. Art and design history and general education requirements are offered at Northeastern University, and studio art courses, which are determined in consultation with academic advisors at the SMFA at Tufts, are targeted to each student's unique program of study.

Art History Requirements for Studio Art

A cumulative grade-point average (GPA) of 2.500 or higher is required for the art history requirements.

Code	Title	Hours
Art History Required Courses		
ARTH 2210	Modern Art and Design History	4
ARTH 2211	Contemporary Art and Design History	4
Art and Design History Electives		
Complete three of the following:		12
ARTH 1100	Interactive Media and Society	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5400	Contemporary Visual Culture	
ARTH 5902	Special Topics in Art and Design History	
ARTE 2301	The Graphic Novel	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	
ARCH 1320	Architecture and Global Cultures, 1400 to Present	
ARCH 1350	American Architecture	
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	
CLTR 1240	Latin American Film	
CLTR 1260	Japanese Film	
CLTR 1280	French Film and Culture	
CINE 2336	American Film and Culture	
CINE 3392	Gender and Film	
CINE 3500	Film Theory	
CINE 3920	Topics in Film Studies	
ECON 1281	Economics of the Creative Industries	
GAME 1110	Games and Society	
MSCR 1220	Media, Culture, and Society	
MSCR 2302	Advertising and Promotional Culture	
MSCR 3426	Popular Music as Media Form	

MUSC 1109	Introduction to Art, Drama, and Music
MUSC 1113	Film Music

Studio Art Courses

Code	Title	Hours
Studio Art		
Specific courses are targeted to each student's unique program of study, which is determined in consultation with an academic advisor at SMFA at Tufts. These courses generally have the following course number:		68
SMFA 3000	Museum of Fine Arts Studio (4 to 12 SH)	
Senior Thesis Capstone		
Senior thesis is a self-directed studio practice and exhibition under consultation of senior thesis faculty at SMFA at Tufts. These courses are generally in the SMFA subject area:		8
SMFA 4000	Museum of Fine Arts Capstone	

Studio Art Major Credit Requirement

Complete 96 semester hours in the major.

Program Requirement

136 total semester hours required

Plan of Study

Sample Four Years, No Co-op Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000	1	SMFA 3000	10	Vacation	0	Vacation	0
SMFA 3000	10	ARTH 2210	4				
ENGW 1111	4	Elective	4				
Art history elective	4						
		19		18		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SMFA 3000	10	SMFA 3000	10	Vacation	0	Vacation	0
ARTH 2211	4	Elective	4				
Elective	4	Elective	4				
		18		18		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SMFA 3000	10	SMFA 3000	10	Vacation	0	Vacation	0
Elective	4	Art history elective	4				
Elective	4	Elective	4				
		18		18		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SMFA 3000	4	SMFA 3000	4				
SMFA 4000	4	SMFA 4000	4				
Art history elective	4	Elective	4				

Elective	4	Elective	4
	16		16

Total Hours: 141

Architecture and Graphic and Information Design, BS

The School of Architecture and the Department of Art + Design offer a combined major in architecture and graphic and information design. Students interested in the combined major connect specific problem solving inherent to architectural understanding with the larger context of contemporary cities. They learn to conceptualize, synthesize, and represent complex architectural, urban, and environmental issues. Students combine this knowledge with the design of message and meaning, integrating text and image to visualize concepts and data to enhance human understanding of complex and vital knowledge.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath attributes Natural and Designed World (ND), Creative Expression and Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

In order to graduate, students must complete Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Ethical Reasoning (ER) in their electives.

Architecture Requirements

Code	Title	Hours
Required Courses		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 1320	Architecture and Global Cultures, 1400 to Present	4
ARCH 1450	Understanding Design	4
ARCH 2130	Site, Space, and Program	6
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	4
Electives		
Complete two of the following courses:		8
ARCH 3370	Topics in Architectural History	

ARCH 3450	Advanced Architectural Communication
ARCH 5310	Design Tactics and Operations

Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Art and Design Electives		
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1124)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirement

Code	Title	Hours
ARTG 4551	Design Degree Project 2	4

Program Requirement

132 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or ARCH 1000	1	ARCH 1110	4	Vacation	0	Vacation	0
ARTG 1250	4	ARCH 1120	6				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 2220 (with optional ARTF 2221)	4				
ENGW 1111	4	ARCH 1320	4				
ARCH 1310	4						
	17		18		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 2130	6	ARCH 2340	4	Vacation	0	Vacation	0
ARTG 2250 (with optional ARTG 2251)	4	ARTG 2252	4				
ARTH 2210	4	ARCH 1450	4				
ARCH 2330	4	Elective	4				
	18		16		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Architecture elective	4	Co-op	0	Co-op	0	Vacation	0
ARTG 3350	4						
ARTH 2215	4						
ENGW 3314 or 3315	4						
EEAM 2000	1						
	17		0		0		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Architecture elective	4	Co-op	0	Co-op	0	Vacation	0
ARTG 3451	4						
Elective	4						
Elective	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 4550	4	ARTG 4551	4				
Art and design elective	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				
Total Hours: 134							

Business Administration and Design, BS

The combined major in business administration and design integrates fundamental design courses with the theory and practice of management through active learning, problem-driven research, corporate partnerships, and experiential assignments. The BS degree can be accomplished using the five-year co-op plan.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Business Core Requirements

Code	Title	Hours
Introduction to College		
BUSN 1102	Personal Skill Development for Business	1
or ARTF 1000	Art and Design at Northeastern	
Mathematics		
Complete one of the following:		4
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
MATH 1260	Math Fundamentals for Games	
Macroeconomics and Microeconomics		
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
Business Statistics		
MGSC 2301	Business Statistics	4
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Finance		
FINA 2201	Financial Management	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
Business Core Option		
Complete one of the following:		4
ACCT 2301	Managerial Accounting	
MISM 2301	Management Information Systems	

SCHM 2301	Supply Chain and Operations Management	
Professional Development		
BUSN 1103	Professional Development for Business Co-op	1
or EEAM 2000	Professional Development for Co-op	

Art + Design Requirements

Code	Title	Hours
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (With optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (With optional ARTF 2224)	4
Design Courses		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (With optional ARTG 2251)	4
ARTG 3350	Typography 2	4
ARTG 3460	Identity and Brand Design	4
Art+Design History		
ARTH 1100	Interactive Media and Society	4
ARTH 2215	History of Graphic Design	4

Design Option

Code	Title	Hours
Complete one of the following options:		8
Interaction Design Option		
ARTG 2400	Interaction Design 1: Responsive (With optional ARTG 2401)	
ARTG 3700	Interaction Design 2: Mobile	
Graphic and Information Design Option		
ARTG 2252	Graphic Design 1	
ARTG 3463	Experience Design 2	
Experience Design Option		
ARTG 3462	Experience Design 1	
ARTG 3463	Experience Design 2	

Marketing Concentration

Code	Title	Hours
Required Courses		
MKTG 3301	Marketing Management	4
MKTG 3401	Marketing Research	4
Electives		
At least one course must be taken from the business courses listed and one from the interactive media courses listed.		
Complete three of the following:		12
<i>Business</i>		
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
<i>Art + Design</i>		
ARTD 2360	Photo Basics (With optional ARTD 2361)	

ARTD 2380	Video Basics (With optional ARTD 2381)	
ARTF 2220	4D Fundamentals: Sequence and Drawing (With optional ARTF 2221)	
ARTG 2260	Programming Basics	
ARTG 3250	Physical Computing	
ARTG 3351	Time-Based Design	
ARTG 3451	Information Design 1	
ARTE 4901	Special Topics in Art and Design Studio	

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following list. Requirements for the concentrations are listed below (p. 77).

- Accounting (p. 77)
- Business/Interdisciplinary (p. 78)
- Entrepreneurship and Innovation (p. 78)
- Finance (p. 78)
- Management (p. 78)
- Management Information Systems (p. 79)
- Supply Chain Management (p. 79)

Integrative Courses

Code	Title	Hours
Integrative Courses		
Note: These courses also satisfy requirements above:		
MKTG 3301	Marketing Management	
ARTG 3460	Identity and Brand Design	
Capstone		
Complete the interactive media capstone or the business capstone:		4-8
<i>Interactive Media Capstone</i>		
ARTG 4550 and ARTG 4551	Design Degree Project 1 and Design Degree Project 2	
ARTG 4700 and ARTG 4701	Interaction Team Degree Project 1 and Interaction Team Degree Project 2	
<i>Business Capstone</i>		
STRT 4501	Strategy in Action	

Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Program Requirement

132 total semester hours required

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following:

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4

ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN BUSINESS/INTERDISCIPLINARY

Code	Title	Hours
Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.		16

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.		
Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	

ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

**Plan of Study
Five Years, Three Co-ops**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BUSN 1102 or ARTF 1000	1	MGSC 2301	4	Vacation		Vacation	
INTB 1203	4	BUSN 1100	1				
ACCT 1201	4	ENGW 1111, MATH 1231, or MATH 1260	4				
ENGW 1111, MATH 1231, or MATH 1260	4	ARTG 2250 (With optional ARTG 2251)	4				
ARTG 1250	4	ARTF 1122 (With optional ARTF 1123)	4				
		17		17		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MKTG 2201	4	Co-op 1	0	Co-op 1	0	Elective	4
FINA 2201	4					Elective ND or DD	4
BUSN 1103	1						
ARTF 2223 (With optional ARTF 2224)	4						
Art + design history	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116 or 1115	4	Co-op 2	0	Co-op 2	0	Business core option	4
ORGB 3201	4					ENGW 3302	4
MKTG 3301 or 3401	4						

Design option 1	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MKTG 3301 or 3401	4	Co-op 3		Co-op 3		Vacation	
Concentration elective 1	4						
Design option 2	4						
ARTG 3350	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours				
Concentration elective 2	4	ARTG 4551, 4701, or STRT 4501	4				
ARTG 3460	4	Concentration elective 3	4				
ARTG 4550 or 4700 (or Elective)	4	Elective	4				
Elective ND or DD	4	Elective	4				
	16		16				

Total Hours: 131

Computer Science and Design, BS

The combined major in computer science and design integrates fundamental design courses with a strong programming foundation. Students will declare a concentration in interaction design, graphic and information design, or experience design. Students in this major often have an interest in human-centered design methods used in developing digital interfaces and applications.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200 or ARTF 1000	Leadership Skill Development Art and Design at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
IS 4300	Human Computer Interaction	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:	8
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Design Requirements

Code	Title	Hours
Design Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
ARTG 1250	Design Process Context and Systems	4
ARTG 2260	Programming Basics	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4

Art + Design History

Complete one of the following:	4	
ARTH 1100	Interactive Media and Society	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 2215	History of Graphic Design	

Degree Capstone Project

Complete one of the following:	8	
ARTG 4550 and ARTG 4551	Design Degree Project 1 and Design Degree Project 2	
ARTG 4700 and ARTG 4701	Interaction Team Degree Project 1 and Interaction Team Degree Project 2	

Design Options

Complete one of the following options:

Code	Title	Hours
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Interaction Design Option

ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
ARTG 3700	Interaction Design 2: Mobile	4

Code	Title	Hours
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Graphic and Information Design Option

ARTG 2252	Graphic Design 1	4
ARTG 3450	Graphic Design 2	4

Code	Title	Hours
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Experience Design Option

ARTG 3462	Experience Design 1	4
ARTG 3463	Experience Design 2	4

Degree-Focused Electives

Code	Title	Hours
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Complete two courses from the following lists: 8

Art + Design

ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	
ARTD 2100	Narrative Basics	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2252	Graphic Design 1	
ARTG 2300	Business Literacy for Design and Media	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3450	Graphic Design 2	
ARTG 3250	Physical Computing	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 3462	Experience Design 1	
ARTG 3463	Experience Design 2	
ARTG 3700	Interaction Design 2: Mobile	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	
ARTE 4901	Special Topics in Art and Design Studio	

Psychology

PSYC 1101	Foundations of Psychology	
PSYC 3452	Sensation and Perception	
PSYC 3464	Psychology of Language	
PSYC 3466	Cognition	

Computer Science

CS 3200	Database Design	
CS 3520	Programming in C++	
CS 3540	Game Programming	
CS 3650	Computer Systems	
CS 3700	Networks and Distributed Systems	
CS 3800	Theory of Computation	
CS 4100	Artificial Intelligence	
CS 4150	Game Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4400	Programming Languages	
CS 4520	Mobile Application Development	
CS 4550	Web Development	
CS 4850	Building Game Engines	
IS 2000	Principles of Information Science	
DS 4100	Data Collection, Integration, and Analysis	
DS 4200	Information Presentation and Visualization	
DS 4300	Large-Scale Information Storage and Retrieval	
DS 4400	Machine Learning and Data Mining 1	
DS 4420	Machine Learning and Data Mining 2	
CS 4991	Research	
CS 4992	Directed Study	
CS 4993	Independent Study	

Integrative Requirement

Code	Title	Hours
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The following courses are used in the major but also count as the integrative requirement:

IS 4300	Human Computer Interaction	
ARTG 2260	Programming Basics	

Supporting Course

Code	Title	Hours
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315 Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
	Complete six general electives.	24

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

131 total semester hours required

Plan of Study

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200 or ARTF 1000	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	ARTG 1250	4				
CS 2500 and CS 2501	5	ARTF 2223 (with optional ARTF 2224)	4				
ENGW 1111	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						
		19		17		0	
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op 1		Co-op 1		Elective	4
CS 3500	4					Elective	4
Design option course 1	4						
CS 3000	4						
ARTG 2250 (with optional ARTG 2251)	4						
		17		0		0	
						8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 4300	4	Co-op 2		Co-op 2		ENGW 3302 or 3315	4
ARTG 2260	4					Elective	4
Degree-focused elective	4						
Art + design history elective	4						
THTR 1170	1						
		17		0		0	
						8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 3350	4	Co-op 3		Co-op 3			
Design option course 2	4						
Degree-focused elective 2	4						
Computing and social issues elective	4						
		16		0		0	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Design capstone 1*	4	Design capstone 2*	4				
ARTG 3451	4	CS elective	4				
CS 4500 and CS 4501	4	Elective	4				
CS elective	4	Elective	4				
		16		16			

Total Hours: 134

* Indicates course must be taken in the semester listed.

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500		4	Vacation
CS 1800 and CS 1802	5	ARTG 1250	4	CS 3000		4	
CS 2500 and CS 2501	5	ARTF 2223 (with optional ARTF 2224)	4				
ENGW 1111	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						
		19		17		8	
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 2260	4	Co-op 1		Co-op 1		ENGW 3302	4
ARTG 2250 (with optional ARTG 2251)	4					Elective	4
Design option course 1	4						
Degree-focused elective 1	4						
CS 1210	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op 2		Co-op 2		Elective	4
IS 4300	4					Elective	4
Design option course 2	4						
Art + design history elective	4						
Computing and social issues	4						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Design capstone 1*	4	Design capstone 2*	4	Elective	4		
ARTG 3350	4	Degree-focused elective 2	4	Elective	4		
ARTG 3451	4	CS elective	4				
CS 4500 and CS 4501	4	CS elective	4				
	16		16		8		

Total Hours: 134

Computer Science and Game Development, BS

The computer science and game development combined major focuses on the specific skills needed to succeed in the highly competitive game industry. Students will engage in building and developing games and playable media experiences while completing courses in computer science and specialized game technology and design. Interdisciplinary courses enable students to develop their creative and entrepreneurial abilities, as well as create a strong portfolio of game pieces.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3520	Programming in C++ (Integrative course)	4
CS 3540	Game Programming (Integrative course)	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 4300	Computer Graphics (Integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
CS 4850	Building Game Engines (Integrative course)	4

Computer Science Elective Course

CS 4150	Game Artificial Intelligence (Integrative course)	4
or IS 4300	Human Computer Interaction	

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Game Design Courses

Code	Title	Hours
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Game Design

GAME 1110	Games and Society	4
GAME 2010	The Business of Games	4
GAME 2500	Foundations of Game Design	4
GAME 3700	Rapid Idea Prototyping for Games	4
GAME 3800	Game Concept Development and Production	4
GAME 4700	Game Design Capstone 1	4
GAME 4701	Game Design Capstone 2	4

Game Design Elective

Complete one GAME course other than GAME 2150, GAME 3150, or GAME 3250. 4

Computer Science/Game-Related Electives

Complete two courses from the following: 8

Any course in GAME subject area except GAME 2150, GAME 3150, or GAME 3250

Any course in the ARTD, ARTE, ARTF, ARTG, ARTH, and ARTS subject areas

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

MATH 1342 Calculus 2 for Science and Engineering

ECON 2350 Statistics

or PSYC 2320 Statistics in Psychological Research

Supporting Courses

Code	Title	Hours
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Psychology

PSYC 1101	Foundations of Psychology	4
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Mathematics

A grade of C– or higher is required:

MATH 1260	Math Fundamentals for Games (Integrative course)	4
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MATH 1341	Calculus 1 for Science and Engineering	4
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Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

Students are strongly encouraged to take Advanced Writing in the Technical Professions (ENGW 3302) but may substitute Interdisciplinary Advanced Writing in the Disciplines (ENGW 3315).

ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315 Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete four general electives.		16

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Understanding Societies and Institutions
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Four Years, Two Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MATH 1260	4	MATH 1341	4		
CS 2500 and CS 2501	5	Elective	4				
GAME 2500 (*)	4	GAME 1110	4				
ENGW 1111	4						
		19		17		8	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3520 (*)	4	CS 1210	1	Elective	4	Co-op	4
CS 3000	4	CS 3540 (*)	4	Elective	4		
GAME 2010 (*)	4	CS 3650	4				
GAME 3700 (*)	4	GAME 3800	4				
		CS/game elective	4				
		16		17		8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4850 (*)	4	Co-op	0	Co-op	0
		CS 4300	4				
		ENGW 3302	4				
		PSYC 1101	4				
		THTR 1170	1				
		0		17		0	

Year 4

Fall	Hours	Spring	Hours	Summer 2	Hours
GAME 4700 (*)	4	GAME 4701 (*)	4	Vacation	0
CS 3700	4	Computer science elective	4		
CS 4500 and CS 4501	4	Game elective	4		
CS/game elective	4	Elective	4		
		16		16	

Total Hours: 134

*Indicates courses that must be taken in the semester listed.

Computer Science and Media Arts, BS

The computer science and media arts combined major is ideal for creative students who love technology. Students will acquire a solid

foundation in both fields through curriculum that spans photography, animation, video, database design, computer graphics, and human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4300	Computer Graphics	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
IS 4300	Human Computer Interaction	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4

Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Media Arts Courses

Code	Title	Hours
Required Media Arts Courses		
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTD 2100	Narrative Basics	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4

Media Arts Electives

Complete six of the following:		24
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	

Basics

ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	

Photography

ARTD 3460	Photography 1	
ARTD 4565	Photography 2	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	

Animation

ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	

Video

ARTD 3480	Video: Sound and Image	
ARTD 5582	Collaborative Video and Community Engagement	

History

ARTH 2212	Survey of the Still and Moving Image	
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Media Arts Capstone Requirement

ARTD 4530	Media Arts Degree Project 1	4
ARTD 4670	Media Arts Degree Project 2	4

Supporting Courses

Code	Title	Hours
Mathematics Requirement		
MATH 2331	Linear Algebra	4
Computing and Social Issues		

Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Integrative Courses

Code	Title	Hours
The following courses are fulfilled through the computer science requirement:		
CS 4300	Computer Graphics	
IS 4300	Human Computer Interaction	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Integrating Knowledge and Skills Through Experience
- Demonstrating Thought and Action in a Capstone

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

131 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4	Elective	4		
CS 2500 and CS 2501	5	ARTF 1120	4				

ARTF 1122 (with optional ARTF 1123)	4	ARTF 1124 (with optional ARTF 1125)	4				
ENGW 1111	4						
		19			17		
					8		
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		Elective	4
IS 4300	4					Elective	4
CS 3000	4						
ARTF 2220 (with optional ARTF 2221)	4						
ARTD 2100	4						
		17			0	0	
						8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op		0 Co-op		0 Vacation	0
MATH 2331	4						
Computer science elective	4						
Media arts elective	4						
Media arts elective	4						
		17			0	0	
						0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4300	4	Co-op		0 Co-op		0 Vacation	0
Media arts elective	4	ENGW 3302	4				
Computer science elective	4						
Media arts elective	4						
		16			4	0	
						0	

Year 5

Fall	Hours	Spring	Hours
ARTD 4530 (*)	4	ARTD 4670 (*)	4
CS 4500 and CS 4501	4	Computing and social issues	4
Media arts elective	4	Elective	4
Media arts elective	4	Elective	4
		16	16

Total Hours: 138

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510	4	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 2511	1	Elective		4	
CS 2500	4	CS 3200	4				
CS 2501	1	ARTF 1120	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 1124 (with optional ARTF 1125)	4				
ENGW 1111	4						
	19		17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		MATH 2331	4
IS 4300	4					Elective	4
CS 3000	4						
ARTF 2220 (with optional ARTF 2221)	4						
ARTD 2100	4						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op		Co-op		0 Elective	4
CS 4300	4	ENGW 3302	4			Media arts elective	4
Computer science elective	4						
Media arts elective	4						
Media arts elective	4						
	17		4		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTD 4530	4	ARTD 4670	4	Elective	4		
CS 4500 and CS 4501	4	Computing and social issues	4	Elective	4		
Computer science elective	4	Media arts elective	4				
Media arts elective	4	Media arts elective	4				
	16		16		8		

Total Hours: 138

*Indicates course must be taken in the term listed.

Communication Studies and Graphic and Information Design, BA

The Department of Communication Studies and the Department of Art + Design offer a combined major in communication studies and graphic and information design. Students interested in the combined major integrate the study of communication skills and processes with the design of message and meaning, integrating text, image, and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive

Complete two of the following: 8

COMM 3200	Mobile Communication
COMM 3201	Health Communication
COMM 3230	Interpersonal Communication
COMM 3304	Communication and Inclusion
COMM 3320	Political Communication
COMM 3330	Argumentation Theory
COMM 3400	Rhetoric of Science
COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Electives

Complete three COMM courses. 12

Graphic and Information Design Requirements

Code	Title	Hours
Introduction to Art and Design		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Graphic and Information Design Elective		
Complete one course with the corresponding tools course, if indicated, from the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	

ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)
ARTG 3351	Time-Based Design
ARTG 3450	Graphic Design 2
ARTG 3460	Identity and Brand Design
ARTG 4552	Information Design 2
ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3

Integrative Requirement

Code	Title	Hours
Integrative Course		
COMM 4602 or ARTG 4551	Contemporary Rhetorical Theory Design Degree Project 2	4

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Communication Studies and Graphic and Information Design Major Credit Requirement

84 semester hours required in the major

Program Requirement

128 total semester hours required

Plan of Study**Sample Five Years, Three Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or COMM 1000	1	ENGW 1111	4	Communication studies elective	4	Vacation	0
COMM 1101	4	Communicati studies foundation course	4	Foreign language core course	4		
ARTG 1250	4	COMM 1112 or 2301	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 2220 (with optional ARTF 2221)	4				
Elective	4						
		17	16	8	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	Communicati studies elective	4				
ARTH 2210	4	Foreign language core course	4				

ARTG 2250 (with optional ARTG 2251)	4	ARTG 2252	4			
		EEAM 2000	1			
	16		17		0	0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Communication studies elective	4	Communication studies elective	4	Co-op
		ARTH 2215	4	Elective	4	
		ARTG 3350	4			
		ENGW 3314 or 3315	4			
	0		16		8	0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Communication studies writing-intensive	4	Vacation	0	Co-op
		Elective	4			
		ARTG 3451	4			
		ARTG 4550	4			
	0		16		0	0
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	COMM 4602 or ARTG 4551	4			
		Graphic and information design elective	4			
		Elective	4			
		Elective	4			
	0		16			

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTF 1000 or COMM 1000	1	Communication studies foundation course	4	Communication studies elective	4	Vacation
COMM 1101	4	ENGW 1111	4	Foreign language elective	4	
ARTG 1250	4	ARTF 2220 (with optional ARTF 2221)	4			
ARTF 1122 (with optional ARTF 1123)	4	COMM 1112 or 2301	4			

Elective	4				
	17	16	8	0	
Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
Communication studies cluster course	4	Co-op	0	Co-op	0
		Foreign language core course	4		Communication studies writing-intensive
		Elective	4		
		EEAM 2000	1		
		ARTG 2250 (with optional ARTG 2251)	4		
	17		0	0	8
Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
Communication studies elective	4	Co-op	0	Co-op	0
		Foreign language core course	4		
		ARTH 2215	4		
		ARTG 2252	4		
	16		0	0	0
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Elective	4	Co-op	0	Co-op	0
		ARTH 2210	4		
		ENGW 3314 or 3315	4		
		ARTG 3350	4		
	16		0	0	0
Year 5					
Fall	Hours	Spring	Hours		
Communication studies writing-intensive	4	COMM 4602 or ARTG 4551	4		
ARTG 3451	4	Graphic and information design elective	4		
Elective	4	Elective	4		
ARTG 4550	4	Elective	4		
	16		16		

Total Hours: 130

English and Graphic and Information Design, BA

The Department of English and the Department of Art + Design offer an interdisciplinary combined major in English and graphic and information

design. Students interested in the combined major in English and graphic and information design integrate the study of literature and writing with the design of message and meaning, integrating text, image, and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		

Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods

Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	

Comparative Literature

Complete one of the following:		4
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ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following:		4
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
or ENGL 1000	English at Northeastern	
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Art and Design Electives		
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirement

Code	Title	Hours
Integrative English Course		
Complete one of the following:		4
ENGL 2301	The Graphic Novel	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 3340	Technologies of Text	
ARTG 4551	Design Degree Project 2	

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops (Summer 2/Fall)

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGL 1000 or ARTF 1000	1	ENGL 1160 or 1410	4	Vacation		Vacation	
ENGL 1450	4	ARTG 1450	4				
ARTF 11 (with optional ARTF 2221)	4	Integrat course	4				
Elective	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2220 (with optional ARTF 2221)	4	ARTH 2210	4	Vacation		Co-op	
ENGL 1700	4	ENGL 19th-century requirement	4				
ENGL pre-19th century requirer	4	ENGL theories & method requirer	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ARTG 3350	4	Vacation		Co-op	
		ARTH 2:	4				
		ENGL comparative requirement	4				
		ENGL diversity requirer	4				
	0		16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
Co-op		ARTG 3451	4	Vacation	
		Elective	4		

ENGL 20th-century requirement	4		
ENGL elective	4		
	0	16	0

Year 5

Fall	Hours	Spring	Hours
ARTG 4550	4	Integrative course	
ENGL 4:	4	English writing requirer	4
Elective	4	Elective	4
ENGL elective	4	Elective	4
	16		12

Total Hours: 125

Game Art and Animation, BFA

Game art and animation offers students an opportunity to master visual arts and animation within the game medium. The program focuses on developing the depth of knowledge required to be successful in a highly competitive industry. The continuing revolution in digital computing and animation has produced a rapidly evolving field for artists who create aesthetics, characters, and environments for games. The major encourages students to think critically and work collaboratively in multidisciplinary teams. The collaborative approach helps all team members to understand the context in which their asset contributions are used and to develop visual design skills in the service of larger experiential goals. Students have many opportunities to collaborate with their peers and work with students in the BS in computer science and game development and BFA in games majors, culminating in a two-semester senior capstone. Students will have a home college in the College of Arts, Media and Design but will have a minimum of four interdisciplinary courses where students interact and work together with students in the other degrees.

Working in the interdisciplinary game areas, the program fosters experiential learning opportunities utilizing diverse intersections of skills merging artistic practice and expression blended with technology. Focus is on establishing core skills that engage critical thinking in preparation for professional practice in game art and asset creation or moving on to advanced study. Students will have an opportunity to develop tools to succeed, eagerness to innovate, and skills to become next-generation entrepreneurs in an ever-changing games and media landscape. Practical and technical experiential training will be offered via Northeastern's world-renowned co-op program.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Analyzing/Using Data (AD) are met through the major course requirements. All other NUpath requirements must be met through electives.

Game Art Courses

Code	Title	Hours
Art and Design Learning Community		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Foundation		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
ARTF 1120	Observational Drawing	4
GAME 1110	Games and Society	4
ARTH 1111	Global Art and Design History: Renaissance to Modern	4
ARTH 2212	Survey of the Still and Moving Image	4
Art History Elective		
Complete one of the following:		4
ARTH 1100	Interactive Media and Society	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2213	Nineteenth-Century Art	
ARTH 2215	History of Graphic Design	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
Media Arts Requirements		
GAME 2500	Foundations of Game Design	4
ARTD 2100	Narrative Basics	4
or GAME 2355	Narrative for Games	
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	

Animation Courses

Code	Title	Hours
Animation		
ARTD 3470	Animation 1	4
ARTD 3472	Character Design for Animation	4
ARTD 3473	Animation for Games	4
ARTD 4570	Animation 2	4
ARTD 4575	Animation 3	4
Electives		
Complete three of the following:		12
<i>Game Design</i>		
GAME 1850	Experimental Game Design	
GAME 2010	The Business of Games	
GAME 2650	Introduction to Game Research Methods	
GAME 2750	Games Criticism and Theory	
GAME 2755	Games and Social Justice	
GAME 2950	Game Studio	
GAME 3055	Playful Design	
GAME 3300	Game Interface Design	
GAME 3400	Level Design and Game Architecture	
GAME 3700	Rapid Idea Prototyping for Games	
GAME 3800	Game Concept Development and Production	
GAME 4155	Designing Imaginary Worlds	
<i>Art and Design</i>		
ARTG 2260	Programming Basics	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 1100	Interactive Media and Society	
ARTH 2213	Nineteenth-Century Art	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTD 4577	Digital Sculpture and Model Making	
ARTG 2252	Graphic Design 1	
ARTG 2300	Business Literacy for Design and Media	
ARTG 3250	Physical Computing	
ARTG 3351	Time-Based Design	
<i>Other</i>		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
PSYC 1101	Foundations of Psychology	

Capstone Requirement

Code	Title	Hours
ARTD 4530	Media Arts Degree Project 1	4
ARTD 4670	Media Arts Degree Project 2	4

Supporting Course

Code	Title	Hours
MATH 1260	Math Fundamentals for Games	4

Writing Requirement

Code	Title	Hours
ENGW 3314	Advanced Writing in the Arts, Media, and Design	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Digital Art and Game Design Major Credit Requirement

97 semester hours required in the major

Program Requirement

133 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops in Spring/Summer 1. Sample ZA Plan of Study Only

Year 1			
Fall	Hours	Spring	Hours
ARTF 1000	1	ARTF 1122 (with optional ARTF 1123)	4
ARTF 1120	4	ARTF 2220 (with optional ARTF 2221)	4
ARTF 1124 (with optional ARTF 1125)	4	GAME 1110	4
GAME 2500	4	Elective (MATH 1260 suggested)	4
ENGW 1111	4		
		17	16

Year 2			
Fall	Hours	Spring	Hours
ARTF 2223 (with optional ARTD 2224)	4	ARTD 3473	4
ARTD 2370 (with optional ARTD 2371)	4	ARTD 3470	4
GAME 2355	4	ARTH 1111	4
ARTH elective	4	Elective	4
		16	16

Year 3				
Fall	Hours	Spring	Hours	Summer 1
ARTD 4570	4	Co-op		Co-op
ARTD 3472	4			
ARTH 2212	4			
Advanced Writing in the Disciplines	4			
EEAM 2000	1			
		17	0	0

Year 4				
Fall	Hours	Spring	Hours	Summer 1
GAME or A + D elective	4	Co-op		Co-op
GAME or A + D elective	4			
Elective	4			
Elective	4			
		16	0	0

Year 5			
Fall	Hours	Spring	Hours
ARTD 4530	4	ARTD 4670	4
ARTD 4575	4	Media arts elective	4
GAME or A + D elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 130

Game Design and Music with concentration in Music Technology, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Game Design Major Requirements

Code	Title	Hours
Art + Design Required Foundation Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4

Required Games Courses

GAME 1110	Games and Society	4
GAME 1850	Experimental Game Design	4
GAME 2500	Foundations of Game Design	4
GAME 3700	Rapid Idea Prototyping for Games	4
GAME 3800	Game Concept Development and Production	4

Game Design Electives

Complete five of the following:		20
ARTG 2260	Programming Basics	
ARTG 3250	Physical Computing	
GAME 2010	The Business of Games	
GAME 2355	Narrative for Games	
GAME 2650	Introduction to Game Research Methods	
GAME 2750	Games Criticism and Theory	
GAME 2755	Games and Social Justice	
GAME 2950	Game Studio	
GAME 3055	Playful Design	
GAME 3300	Game Interface Design	
GAME 3400	Level Design and Game Architecture	
GAME 4155	Designing Imaginary Worlds	
GAME 4700	Game Design Capstone 1	

Music Requirements

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Music in Context		
MUSC 1001	Music in Everyday Life	4
Contemporary		
Complete one from the following:		4
MUSC 2315	History of Electronic Music	
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2320	40,000 Years of Music Technology	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	

Music Technology

MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
MUSC 2350	Acoustics and Psychoacoustics of Music	4

Music Technology Electives

Complete two from the following:		8
MUST 4520	Interactive Music Programming	
MUST 4610	Composition for Electronic Instruments	
MUST 3540	Special Topics in Music Technology	

Integrative Requirement

Code	Title	Hours
MUST 1220	Introduction to Music Technology	4
Capstone		

Complete one of the following:		4
MUST 4611	Music Technology Capstone/Senior Recital	
GAME 4701	Game Design Capstone 2	

Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

138 total semester hours required

Graphic and Information Design and Mathematics, BS

The Department of Mathematics and the Department of Art + Design offer a combined major in mathematics and graphic and information design. Students interested in the combined major integrate the study of mathematical reasoning including methods for analyzing and solving problems encountered in the physical world with the design of message and meaning, integrating text and image to visualize concepts and data to enhance human understanding of complex and vital knowledge.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Difference and Diversity (DD), and Ethical Reasoning (ER) must be met through electives.

Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4

ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Art and Design Elective		
ARTG 4551 can count as an Art and Design elective as well as a capstone.		
Complete one of the following: 4		
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4551	Design Degree Project 2	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Mathematics Requirements

Code	Title	Hours
Math Reasoning		
MATH 1365	Introduction to Mathematical Reasoning	4
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate Math		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Advanced Elective		
Complete one of the following: 4		
MATH 3150	Real Analysis	
MATH 3175	Group Theory	
MATH 3560	Geometry	
Mathematics Elective		
MATH 4025 can count as an upper-level math elective as well as a capstone.		
Complete one course in the following range: 4		
MATH 3101 to MATH 4899		

Integrative Requirement

Code	Title	Hours
ARTG 3451	Information Design 1	4

Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Journalism and Interaction Design, BS

The School of Journalism and the Department of Art and Design offer an interdisciplinary combined major in journalism and interaction design. Broadly speaking, students in the combined major in journalism and interaction design at Northeastern integrate the study of journalism with the study of art and design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

NUPath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), Difference and Diversity (DD), and Ethical Reasoning (ER) are met through the major course requirements.

NUPath requirement Analyzing and Using Data (AD) may be met through electives in the major.

NUPath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Introduction to College

Code	Title	Hours
JRNL 1000	Journalism at Northeastern	1
or ARTF 1000	Art and Design at Northeastern	

Journalism Major Requirements

Code	Title	Hours
Journalism Introductory Course		
JRNL 1150	Understanding Today's News	4
Journalism Foundations		
Must receive a C or better in the following:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

Law and Ethics

JRNL 3550	The First Amendment and the Media	4
or JRNL 4650	Ethics and Issues in Journalism	

Journalism Electives

Take three JRNL courses		12
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Art and Design Core

Code	Title	Hours
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Art and Design Fundamentals

ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4

Art and Design History

Complete two of the following: 8

ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2215	History of Graphic Design	

Design Requirements

Code	Title	Hours
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Design Courses

ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2260	Programming Basics	4
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
ARTG 3700	Interaction Design 2: Mobile	4

Degree Project

Complete one of the following: 8

ARTG 4550	Design Degree Project 1	
ARTG 4700	Interaction Team Degree Project 1	

Design Elective

Code	Title	Hours
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Complete one of the following: 4

ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4552	Information Design 2	

ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3

Integrative Requirements

Code	Title	Hours
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JRNL 5311	Design and Graphics	4
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Complete one of the following: 4

ARTG 4551	Design Degree Project 2	
or ARTG 4701	Interaction Team Degree Project 2	

Program Requirement

131 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ARTF 1000	1	JRNL 1101 and JRNL 1102	5	Elective	4	Vacation	
JRNL 1150	4	ARTF 2223 (with optional ARTF 2224)	4	Elective	4		
ENGW 1111	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTG 1250	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						

17 17 8 0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op 1		Co-op 1		Vacation	
EEAM 2000	1						
Art + design history elective 1	4						
ARTG 2260	4						
Elective	4						

17 0 0 0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op 2		Co-op 2		Elective	4
Journalism elective 1	4					ENGW 3302	4
ARTG 2400 (with optional ARTG 2401)	4						
ARTG 3350	4						

16 0 0 8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3610	4	Co-op 3		Co-op 3		Vacation	0
Journalism elective 2	4						
Art + design history elective 2	4						
ARTG 3700	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
JRNL 5311	4	Journalism elective 3	4
JRNL 3550 or 4650	4	ARTG 4551 or 4701	4
ARTG 3451	4	Art + design elective	4
ARTG 4550 or 4700	4	Elective	4
	16		16

Total Hours: 131

Sample Five Years, Three Co-ops**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ARTF 1000	1	JRNL 1101 and JRNL 1102	5	Vacation		Vacation	
JRNL 1150	4	ARTF 2223 (with optional ARTF 2224)	4				
ENGW 1111	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTG 1250	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	JRNL 2301	4	Vacation		Vacation	
EEAM 2000	1	Journalism elective 1	4				
Art + design history elective 1	4	ARTG 2400 (with optional ARTG 2401)	4				
ARTG 2260	4	ARTG 3350	4				
Elective	4						
	17		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours
JRNL 3610	4	Co-op 1		Co-op 1	
Journalism elective 2	4				
Art + design elective	4				
ARTG 3700	4				
	16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
JRNL 3550 or 4650	4	Co-op 2		Co-op 2	
Art + design history elective 2	4				
Elective	4				
ENGW 3302	4				
	16		0		0

Year 5

Fall	Hours	Spring	Hours
JRNL 5311	4	Journalism elective 3	4
ARTG 3451	4	ARTG 4551 or 4701	4
ARTG 4550 or 4700	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 131

Media and Screen Studies and Media Arts, BA

The Media and Screen Studies Program and the Department of Art + Design offer a combined major in media studies and media arts. Students pursuing the combined major are able to integrate the theory and practice of contemporary media studies with the deep appreciation of the narrative arts that is required for professional work in documentary film, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated films.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3446	Topics in Documentary Production	
MSCR 1230	Introduction to Film Production	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
Advanced Media and Screen Electives		
Complete two of the following:		8
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3500	Film Theory	
CINE 3920	Topics in Film Studies	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	

Media Arts Courses

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art + Design Fundamentals		

ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Drawing Fundamentals		
ARTF 1120 or ARTF 1121	Observational Drawing Conceptual Drawing	4
Art + Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2212	Survey of the Still and Moving Image	4
Degree Project		
ARTD 4530	Media Arts Degree Project 1	4
Media Arts Basic Electives		
Complete two of the following sets:		8
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
Art + Design Electives		
Complete two of the following or any drawing fundamental elective/media arts basic elective not previously taken:		8
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 3485	Experimental Video	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 5582	Collaborative Video and Community Engagement	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTD 4670	Media Arts Degree Project 2	
ARTD 2100	Narrative Basics	
ARTG 2300	Business Literacy for Design and Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2211	Contemporary Art and Design History	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	

ARTH 5400	Contemporary Visual Culture
ARTG 2250	Typography 1 (with optional ARTG 2251)
ARTS 2330	Sculpture Basics
ARTS 2340	Painting Basics
ARTS 2341	Figure Drawing
ARTS 3449	Drawing in Mixed Media

Integrative Courses

Code	Title	Hours
CINE 3500	Film Theory	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to fulfill degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

SAMPLE FIVE YEARS, TWO CO-OPS

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	ARTF 2220 (with optional ARTF 2221)	4	Elective	4		
ARTF 1122 (with optional ARTF 1123)	4	ARTH 2212	4				
ARTH 2210	4	ARTF 1120 or 1121	4				
ENGW 1111	4						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
MSCR elective	4						
Media arts basics elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		4

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	co-op		co-op		Elective	4
MSCR elective	4						
Media arts basics elective	4						

Art + design elective	4				
	16	0	0		4

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR advanced elective	4	Co-op		Co-op		Vacation	
Art + design elective	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
MSCR advanced elective	4	MSCR 4623	4
ARTD 4530	4	CINE 3500	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Media Arts and Communication Studies, BA

The Department of Communication Studies and the Department of Art + Design offer a combined major in media arts and communication studies. Students interested in the combined major integrate the study of communication skills and processes with the study of the creation of the narrative arts, required for professional work in documentary film, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated films.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath attributes Creative Expression and Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements.

In order to graduate, students must complete Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data

(AD), Difference and Diversity (DD), and Ethical Reasoning (ER) in their electives.

Media Arts Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Foundations		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Drawing Fundamentals		
ARTF 1120 or ARTF 1121	Observational Drawing Conceptual Drawing	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2212	Survey of the Still and Moving Image	4
Project Required Course		
ARTD 4530	Media Arts Degree Project 1	4
Media Art Basics Electives		
Complete two of the following:		8
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
Art and Design Electives		
Complete two of the following:		8
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTD 2100	Narrative Basics	
ARTG 2300	Business Literacy for Design and Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 4901	Special Topics in Art and Design Studio	
ARTE 3901	Art and Design Special Topics	
ARTH 1100	Interactive Media and Society	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2211	Contemporary Art and Design History	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	

ARTD 3460	Photography 1
ARTD 3470	Animation 1
ARTD 3471	Virtual Environment Design
ARTD 3472	Character Design for Animation
ARTD 3473	Animation for Games
ARTD 3480	Video: Sound and Image
ARTD 4565	Photography 2
ARTD 4570	Animation 2
ARTD 4575	Animation 3
ARTD 4577	Digital Sculpture and Model Making
ARTD 4660	Studio Photography
ARTD 4661	Alternative Photographic Processes
ARTD 4670	Media Arts Degree Project 2
ARTD 5582	Collaborative Video and Community Engagement
ARTS 2330	Sculpture Basics
ARTS 2340	Painting Basics
ARTS 2341	Figure Drawing
ARTS 3449	Drawing in Mixed Media

Communication Studies Courses

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	

COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete three COMM courses. 12

Integrative Requirement

Code	Title	Hours
Bridge/Integrative Requirement		
COMM 3415	Communication Criticism	4

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Program Requirement

128 total semester hours required

Plan of Study**Sample Five Years, Two Co-ops Plan of Study**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or COMM 1000	1	ARTF 2220 (with optional ARTF 2221)	4	Comm elective	4	Vacation	
ARTF 1122 (With optional ARTF 1123)	4	ARTH 2212	4	Elective	4		
ARTH 2210	4	COMM 1112 or 2301	4				
COMM 1101	4	Drawing elective	4				
ENGW 1111	4						
		17	16	8	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media arts basics elective	4	Co-op		Co-op		Elective	4
COMM foundation course	4					Elective	4
COMM cluster course	4						
Elective	4						
EEAM 2000	1						
		17	0	0	8		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media arts basics elective	4	Co-op		Co-op		Vacation	
Art + design elective	4						
COMM elective	4						
COMM writing- intensive	4						
		16	0	0	0		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Art + design elective	4	Co-op		Co-op		Vacation	
COMM elective	4						
COMM writing- intensive	4						
Elective	4						
		16	0	0	0		

Year 5			
Fall	Hours	Spring	Hours
ARTD 4530	4	ARTD 4670 (or COMM Capstone)	4
COMM 3415	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 130

Theatre and Interaction Design, BA**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Theatre Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Major Electives		
Complete one from the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Intermediate/Advanced Electives		
Complete two from the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2300	Classics of Global Theatre	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Interaction Design Requirements

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1	4
ARTG 2251	Type Tools	1
ARTG 2260	Programming Basics	4

ARTG 2400	Interaction Design 1: Responsive	4
ARTG 2401	Interaction Design Tools	1
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
ARTG 3700	Interaction Design 2: Mobile	4

Design Project		
Complete one of the following:		4
ARTG 4550	Design Degree Project 1	
ARTG 4700	Interaction Team Degree Project 1	

Major Electives		
<i>Art + Design History</i>		
Complete two of the following:		8
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2215	History of Graphic Design	

<i>Art + Design Electives</i>		
Complete one of the following:		4
ARTD 2360	Photo Basics	
ARTD 2380	Video Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing	
ARTF 2220	4D Fundamentals: Sequence and Drawing	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3460	Identity and Brand Design	
ARTG 3351	Time-Based Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirement

Code	Title	Hours
THTR 4702	Capstone Rehearsal and Performance	4
ARTG 4551	Design Degree Project 2	4
or ARTG 4701	Interaction Team Degree Project 2	

Theatre and Interaction Design Combined-Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

128 total semester hours required

Theatre and Interaction Design, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Theatre Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Major Electives		
Complete one from the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Intermediate/Advanced Electives		
Complete two from the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2300	Classics of Global Theatre	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Interaction Design Requirements

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1

Art + Design Fundamentals

ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4

Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1	4
ARTG 2251	Type Tools	1
ARTG 2260	Programming Basics	4
ARTG 2400	Interaction Design 1: Responsive	4
ARTG 2401	Interaction Design Tools	1
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
ARTG 3700	Interaction Design 2: Mobile	4

Design Project		
Complete one of the following:		4
ARTG 4550	Design Degree Project 1	
ARTG 4700	Interaction Team Degree Project 1	

Major Electives		
<i>Art + Design History</i>		
Complete two of the following:		8
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2215	History of Graphic Design	

Art + Design Electives		
Complete one of the following:		4
ARTD 2360	Photo Basics	
ARTD 2380	Video Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing	
ARTF 2220	4D Fundamentals: Sequence and Drawing	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3460	Identity and Brand Design	
ARTG 3351	Time-Based Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirement

Code	Title	Hours
THTR 4702	Capstone Rehearsal and Performance	4
ARTG 4551	Design Degree Project 2	4
or ARTG 4701	Interaction Team Degree Project 2	

Theatre and Interaction Design Combined-Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

128 total semester hours required

Animation, Minor

The animation minor immerses students in the creation of animated artwork and assets for short animated films, game art and promotion, documentary films, visualization, motion graphics, illustration, and interactive art. An intensive studio program, this curriculum seeks to immerse students in the knowledge, experience, and techniques of animation, informed by theory, experimentation, and critique. Extensive digital imaging and interactive media editing and production facilities afford students the opportunity to become proficient in the emerging practices necessary for remarkable work.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Students who wish to register for 2000-level courses and above need to plan ahead in order to complete prerequisite course(s) ahead of time.

Requirements for Non-Art and Design Majors

Code	Title	Hours
Required Courses		
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
ARTD 3470	Animation 1	4

Requirements for Art and Design Majors

Note: This minor is not available to students in the BFA in media arts program or any media arts combined major.

Code	Title	Hours
Required Courses		
ARTF 1120	Observational Drawing	4
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
ARTD 3470	Animation 1	4
Electives		
Complete two of the following:		8
ARTD 2100	Narrative Basics	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTE 3901	Art and Design Special Topics	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 2212	Survey of the Still and Moving Image	

GPA Requirement

2.500 GPA required in the minor

Art, Minor

The art minor allows students to complement any degree with a broad exploration of visual studies, fine arts, and design. Following an introduction to the fundamentals of drawing and two-dimensional design, students select from courses in time-based media, interaction, sculpture, painting, and art history. The department's exceptional Dialogues are popular among art minors, who are able to complete a large portion of their course work during culturally immersive and focused studio residencies in places such as Ireland, Iceland, Cuba, and the Galapagos Islands.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Students who wish to register for 2000-level courses and above need to plan ahead in order to complete prerequisite course(s) ahead of time.

Requirements for Non-Art and Design Majors

Code	Title	Hours
Art Required Courses		
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
Art Elective Courses		
Complete three of the following:		12
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	

Requirements for Art and Design Majors

Note: This minor is not available to students in the BA in art program or any art combined major.

Code	Title	Hours
Required Courses		
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
Elective Courses		
Complete three of the following:		12
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	
ARTS 2341	Figure Drawing	
ARTS 3449	Drawing in Mixed Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 3901	Art and Design Special Topics	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	

GPA Requirement

2.500 GPA required in the minor

Art History, Minor

An ideal complement to many majors, the art history minor builds the techniques of visual intelligence necessary to successfully navigate an increasingly image-driven world. Students learn to interpret visual evidence as well as written documents to understand and interrogate how evolving ideas about quality and judgment have shaped the institutions of art, including the growing art market. A diverse and strong faculty brings its own research into the classroom, allowing students to gain international exposure and real-world experience with world-class museums and cultural centers in Boston, Cambridge, and the greater metropolitan area. Art history minors often have opportunities to conduct independent research, develop publishable texts, and gain exposure to the dynamic fields of visual art and curatorial practice.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Students who wish to register for 2000-level courses and above need to plan ahead in order to complete prerequisite course(s) ahead of time.

Note: This minor is not available to students in the BA in art program or any art combined major.

Requirements

Code	Title	Hours
Required Courses		
Complete five of the following:		20
ARTH 1100	Interactive Media and Society	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 2213	Nineteenth-Century Art	
ARTH 2215	History of Graphic Design	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTH 5902	Special Topics in Art and Design History	
ARTE 2501	Art and Design Abroad: History	

GPA Requirement

2.500 GPA required in the minor

Experience Design, Minor

Experience design is a holistic approach that utilizes investigation into human environments in specific situations to improve quality. Given an understanding of goals, needs, and desires, it seeks to improve the various contexts by identifying and studying events and how they can be turned into beneficial practices.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Any prerequisites should be taken before registering for 2000-level courses and above.

Requirements for Non-Art and Design Majors

Code	Title	Hours
Required Courses		
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
ARTG 1250	Design Process Context and Systems	4
ARTG 3462	Experience Design 1	4
Electives		
Complete two of the following:		8
ARTD 2100	Narrative Basics	
ARTE 3901	Art and Design Special Topics	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 2260	Programming Basics	
ARTG 3250	Physical Computing	
ARTG 3463	Experience Design 2	
GE 1110	Engineering Design	

GE 1111	Engineering Problem Solving and Computation
IE 2310 and IE 2311	Introduction to Industrial Engineering and Recitation for IE 2310

Requirements for Art and Design Majors

Note: This minor is not open to students pursuing the BFA in design program or any design combined major.

Code	Title	Hours
Required Courses		
ARTG 1250	Design Process Context and Systems	4
ARTG 3462	Experience Design 1	4
ARTG 3463	Experience Design 2	4
Electives		
Complete two of the following:		8
ARTD 2100	Narrative Basics	
ARTE 3901	Art and Design Special Topics	
ARTG 2260	Programming Basics	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3250	Physical Computing	

GPA Requirement

2.500 GPA required in the minor

Game Art, Minor

The game art minor offers students an opportunity to become immersed in the study and practice of the visual arts and animation within the game medium. Students are afforded the opportunity to think critically and work collaboratively in multidisciplinary teams to produce art and animation assets that are critical to the success of projects in the game medium. Working in the interdisciplinary game areas, the program fosters experiential learning opportunities utilizing diverse intersections of skills merging artistic practice and expression blended with technology. Students will be immersed in experiences to develop tools to succeed, eagerness to innovate, and skills to become next-generation entrepreneurs in the ever-changing games and media landscape.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Students who wish to register for 2000-level courses and above need to plan ahead in order to complete prerequisite course(s) ahead of time.

Requirements for Non-Art + Design Majors

Code	Title	Hours
Required Courses		
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Elective Course		

Complete one of the following:		4
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	

Requirements for Art and Design Majors

Note: This minor is not available to students in the BFA in media arts program or any media arts combined major.

Code	Title	Hours
Required Courses		
ARTD 2370	Animation Basics (with optional ARTD 2371)	4
ARTF 1120	Observational Drawing	4
Additional Courses		
Complete two of the following:		8
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
Elective Course		
Complete one of the following:		4
ARTD 2100	Narrative Basics	
ARTD 3470	Animation 1	
ARTD 4577	Digital Sculpture and Model Making	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
GAME 2500	Foundations of Game Design	

GPA Requirement

2.500 GPA required in the minor

Game Design, Minor

The game design minor allows students in other areas of study to become familiarized with the basics of game design. Game design minor students can collaborate with BFA in games, game art and animation, and computer science in game development students make games and create portfolio pieces. Students will also be encouraged to apply principles from their own discipline to the game designs they create.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Foundations of Game Design

Code	Title	Hours
GAME 2500	Foundations of Game Design	4

Electives

Code	Title	Hours
Complete five of the following:		20-21
Any GAME courses		
ARTD 2100	Narrative Basics	
ARTG 3250	Physical Computing	
IS 4300	Human Computer Interaction	

IE 4522 and IE 4523	Human-Machine Systems and Lab for IE 4522
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GPA Requirement

2.000 GPA required in the minor

Graphic and Information Design, Minor

Graphic design makes messages and meaning using visual form and the integration of text and image. It often has a persuasive intention and uses rules of visual composition, form, and pattern to enable storytelling or to create attention and an ambience for consideration. Information design focuses on visualizing concepts and data to enhance human understanding of complex and vital knowledge.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Any prerequisites should be taken before registering for 2000-level courses and above.

Requirements for Non-Art and Design Majors

Code	Title	Hours
Required Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
Electives		
Complete two of the following:		8
ARTE 3901	Art and Design Special Topics	
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	
ARTH 2215	History of Graphic Design	
ARTG 2252	Graphic Design 1	
ARTG 3350	Typography 2	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3451	Information Design 1	

Requirements for Art and Design Majors

Note: This minor is not open to students pursuing the BFA in design program or any design combined major.

Code	Title	Hours
Required Courses		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
Electives		
Complete three of the following:		12
ARTE 3901	Art and Design Special Topics	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3350	Typography 2	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	

ARTG 3460	Identity and Brand Design
ARTG 4554	Typography 3
ARTH 2215	History of Graphic Design

GPA Requirement

2.500 GPA required in the minor

Interaction Design, Minor

Interaction design focuses on the creation of navigable interfaces and systems that allow audiences to achieve meaningful goals, connecting people to people and people to information and environments.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Any prerequisites should be taken before registering for 2000-level courses and above.

Requirements for Non-Art and Design Majors

Code	Title	Hours
Required Courses		
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
ARTG 1250	Design Process Context and Systems	4
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
Choose one of the programming courses with lab course:		4
ARTG 2260	Programming Basics	
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
Elective		
Complete one of the following:		4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	
ARTG 2250	Typography 1 (with optional ARTG 2251)	
ARTG 2252	Graphic Design 1	
ARTG 3462	Experience Design 1	
ARTG 3700	Interaction Design 2: Mobile	

Requirements for Art and Design Majors

Note: This minor is not open to students pursuing the BFA in design program or any design combined major.

Code	Title	Hours
Required Courses		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
Electives		
Complete two of the following:		8
ARTE 3901	Art and Design Special Topics	
ARTG 2260	Programming Basics	
ARTG 3451	Information Design 1	

ARTG 3462	Experience Design 1
ARTG 3700	Interaction Design 2: Mobile

GPA Requirement

2.500 GPA required in the minor

Photography, Minor

The photography minor immerses students in the creation of photographs. The curriculum seeks to involve students in the knowledge, experience, and techniques of photography, informed by theory, experimentation, and critique. Digital imaging, editing, and production facilities afford students the opportunity to become proficient in the emerging practices necessary for a variety of creative and technical contexts.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Students who wish to register for 2000-level courses and above need to plan ahead in order to complete prerequisite course(s) ahead of time.

Requirements for Non-Art + Design Majors

Code	Title	Hours
Required Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTD 2360	Photo Basics (with optional ARTD 2361)	4
ARTD 3460	Photography 1	4
Elective Courses		
Complete two of the following:		8
ARTD 4565	Photography 2	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTH 2212	Survey of the Still and Moving Image	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	

Requirements for Art + Design Majors

Note: This minor is not available to students in the BFA in media arts program or any media arts combined major.

Code	Title	Hours
Required Courses		
ARTD 2360	Photo Basics (with optional ARTD 2361)	4
ARTD 3460	Photography 1	4
ARTD 4565	Photography 2	4
Elective Courses		
Complete two of the following:		8
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTH 2212	Survey of the Still and Moving Image	
ARTE 2500	Art and Design Abroad: Studio	

ARTE 3901	Art and Design Special Topics
ARTE 4901	Special Topics in Art and Design Studio

GPA Requirement

2.500 GPA required in the minor

Photojournalism, Minor

As our society continues to move toward a world of technology, the power of photos become that much more important. This minor will engage students on how to visually tell a compelling story. It will give students the skill sets needed to succeed in that endeavor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Photography Foundation		
Complete one of the following:		4
ARTE 2500	Art and Design Abroad: Studio	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2350	Photo Basics for Nonmajors	
Photography Requirement		
ARTD 3460	Photography 1	4
Integrative		
JRNL 5310	Photojournalism	4
Electives		
Complete one of the following:		4
JRNL 2301	Visual Storytelling in Journalism	
JRNL 5314	Video News Reporting and Producing	

GPA Requirement

2.000 GPA required in the minor

Video Arts, Minor

The video arts minor is based on a multidisciplinary field focused on creative video expression and messaging. It weaves together collaborative frameworks, theories of social and cultural change, and video production (sound and image) alongside cinematic language (including documentary, imaginative, narrative, and experimental strategies). The scope of the video arts minor is a broader and more diverse tapestry than traditional video arts, and it reflects the dynamic evolution of video in multiple contexts, including the workplace. This minor enables students to explore contemporary, alternative, and other artistic means of video production in a variety of creative and technical contexts.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Any prerequisites should be taken before registering for 2000 level courses and above.

Requirements for Non–Art + Design Majors

Code	Title	Hours
Required Courses		
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
ARTD 2380	Video Basics (with optional ARTD 2381)	4
ARTD 3480	Video: Sound and Image	4
Electives		
Complete two of the following:		8
ARTD 3485	Experimental Video	
ARTD 5582	Collaborative Video and Community Engagement	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 2212	Survey of the Still and Moving Image	

Requirements for Art + Design Majors

Note: This minor is not available to students in the BFA in media arts program or any media arts combined major.

Code	Title	Hours
Required Courses		
ARTD 2380	Video Basics (with optional ARTD 2381)	4
ARTD 3480	Video: Sound and Image	4
ARTD 3485	Experimental Video	4
Electives		
Complete two of the following:		8
ARTD 5582	Collaborative Video and Community Engagement	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 3901	Art and Design Special Topics	
ARTE 4901	Special Topics in Art and Design Studio	
ARTH 2212	Survey of the Still and Moving Image	

GPA Requirement

2.500 GPA required in the minor

Communication Studies

Website (<https://camd.northeastern.edu/commstudies>)

Dale A. Herbeck, PhD
Professor and Chair

212A Lake Hall
617.373.5517
617.373.8533 (fax)
Angela Chin, Administrative Officer, commstudies@northeastern.edu

The Department of Communication Studies is committed to providing students with both the communication skills and the understanding of the communication process required to thrive in a complex and changing society. Majors are required to demonstrate a mastery of the fundamentals of effective communication, to learn the fundamentals of communication theory and practice, and to develop a distinct area of emphasis. Some of the more popular areas include argumentation

and advocacy, organizational and health communication, international and intercultural communication, digital communication and social media, and media production. The curriculum is designed to enhance the understanding of human communication in a variety of contexts, to empower students to become informed and engaged citizens, and to provide the knowledge and skills required to live a rich personal and professional life.

Academic Progression Standards

Departmental probation will result from a cumulative grade-point average below 2.000. No more than two grades below a C in communication studies courses can be used to fulfill degree requirements. Dismissal from the major may occur as a result of two consecutive semesters on departmental probation.

Preapproved Template Program in Communication Studies

The Department of Communication Studies offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<https://registrar.northeastern.edu/article/combined-majors>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see “Student-Requested Combined Major (p. 33).” For template program requirements, visit the myNortheastern web portal (<http://my.northeastern.edu>), click on the “Self-Service” tab, then on “My Degree Audit.”

Media and Screen Studies

Website (<https://camd.northeastern.edu/mscr>)

Dale A. Herbeck, PhD
Professor and Chair

212A Lake Hall
617.373.5517
617.373.8533 (fax)
mscr@northeastern.edu

Media and screen studies (MSCR) educates students in the analysis and production of media. Taught from a liberal arts perspective, a media and screen studies degree seeks to give students the ability to think critically about the continually changing media industry and the complex world in which it exists and to apply that knowledge to media production. MSCR is a challenging degree that is not limited to what is traditionally offered at a film school or in a visual and performing arts degree. It gives students the tools to become engaged citizens equipped to meet the challenges of living in a global culture defined by technological and social change.

The BA in media and screen studies offers courses in analysis and practice. Required courses offer students an opportunity to obtain the critical thinking skills necessary to better understand media content, media technology, and media production. Students then decide how many production and analysis courses they want to take. Choosing from a broad range of electives, students can take more than half their major in media and film production courses, can take a majority of courses that critically examine media content and technology, or can combine courses in other ways.

Students may also enroll in one of the preexistent MSCR combined majors. Media and screen studies has combined majors with communication studies, English, journalism, political science, sociology,

and theatre. Students may also petition for new combinations, making use of the half-major template in media and screen studies.

Academic Progression Standards

For media and screen studies, majors must maintain at least a 2.500 grade-point average (GPA) in their overall program of studies and a minimum of 3.000 in the following two required courses:

Code	Title	Hours
MSCR 1220	Media, Culture, and Society	4
MSCR 2220	Understanding Media and Film	4

Preapproved Template Program in Media and Screen Studies

Media and screen studies offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<https://registrar.northeastern.edu/article/combined-majors>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see “Student-Requested Combined Major (p. 33).” For template program requirements, visit the myNortheastern web portal (<http://my.northeastern.edu>), click on the “Self-Service” tab, then on “My Degree Audit.”

Programs

Bachelor of Arts (BA)

- Communication Studies (p. 111)
- Communication Studies and Graphic and Information Design (p. 87)
- Communication Studies and Media and Screen Studies (p. 118)
- Communication Studies and Sociology (p. 120)
- Communication Studies and Theatre (p. 123)
- English and Communication Studies (p. 127)
- Human Services and Communication Studies (p. 130)
- Linguistics and Communication Studies (p. 131)
- Media Arts and Communication Studies (p. 100)
- Media and Screen Studies (p. 113)
- Media and Screen Studies and English (p. 134)
- Media and Screen Studies and History (p. 137)
- Media and Screen Studies and Journalism (p. 139)
- Media and Screen Studies and Media Arts (p. 98)
- Media and Screen Studies and Philosophy (p. 142)
- Media and Screen Studies and Political Science (p. 144)
- Media and Screen Studies and Sociology (p. 146)
- Media and Screen Studies and Theatre (p. 148)
- Political Science and Communication Studies (p. 154)

Bachelor of Science (BS)

- Computer Science and Communication Studies (p. 125)
- Media and Screen Studies and Theatre (p. 149)
- Music and Communication Studies with Concentration in Music Industry (p. 151)
- Political Science and Communication Studies (p. 156)

Minors

- Cinema Studies (p. 158)
- Communication Studies (p. 158)
- Film Production (p. 158)
- Human Communication (p. 159)
- Media Production (p. 159)
- Media and Screen Studies (p. 159)
- Oratory and Public Speaking (p. 160)
- Political Communication (p. 160)
- Professional Presentation (p. 160)
- Rhetoric (p. 161)
- Social Activism (p. 161)
- Sports, Media, and Communication (p. 161)

Communication Studies, BA

The communication studies major offers students an opportunity to obtain the communication skills and the understanding of the communication process required to thrive in a complex and changing society. Majors are required to demonstrate a mastery of the fundamentals of effective communication, to learn the fundamentals of communication theory and practice, and to develop a distinct area of emphasis. Some of the more popular areas include argumentation and advocacy, organizational and health communication, international and intercultural communication, digital communication and social media, and media production. The curriculum is designed to enhance the understanding of human communication in a variety of contexts, to empower students to become informed and engaged citizens, and to provide the knowledge and skills required to live a rich personal and professional life.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPATH Requirements

All undergraduate students are required to complete the NUPATH Requirements (p. 37).

NUPATH requirements Creative Expression/Innovation (EI), Societies and Institutions (SI), Analyzing and Using Data (AD), and Ethical Reasoning (ER) are met through the major course requirements.

NUPATH requirements Natural and Designed World (ND), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), and Difference and Diversity (DD) may be met through electives in the major.

Communication Studies Major Requirements

Code	Title	Hours
Introduction to College		
COMM 1000	Communication Studies at Northeastern	1
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 2301	Communication Research Methods	4
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive		
Complete two writing-intensive courses in communication studies from the following list:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	
Capstone		
Complete one of the following:		4
COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	
COMM 4602	Contemporary Rhetorical Theory	
COMM 4608	Strategic Communication Capstone	
COMM 4625	Online Communities	
Communication Studies Electives		

Complete five communication studies courses not used to satisfy requirements above. 20

Communication Studies Major Grade Requirement

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Communication Studies Major Credit Requirement

Complete 52 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	ENGW 1111	4	Communication studies elective	4	Vacation	0
COMM 1101	4	Communication studies foundation course	4	Elective	4		
COMM 1112	4	Elective	4				
Elective	4	Elective	4				
Elective	4						
		17		16		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Communication studies writing-intensive	4	Vacation	4	Co-op	0
COMM 2301	4	Communication studies elective	4				
Elective	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
EEAM 2000	1						
		17		16		0	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies elective	4	Communication studies elective	4	Co-op	0
		Elective	4	Elective	4		
		Foreign language core course	4				
		ENGW 3314 or 3315	4				
		0		16		8	
						0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Vacation	0	Co-op	0
		Communicati studies elective	4				
		Elective	4				
		Elective	4				
	0		16		0		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Communication studies capstone	4
		Elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	Communication studies foundation course	4	Communication studies elective	4	Vacation	0
COMM 1101	4	ENGW 1111	4	Foreign language core course	4		
COMM 1112	4	Elective	4				
Elective	4	Elective	4				
Elective	4						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op	0	Co-op	0	Communication studies elective	4
COMM 2301	4					Elective	4
Elective	4						
Foreign language core course	4						
EEAM 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op	0	Co-op	0	Vacation	0

Communicati studies elective	4				
Foreign language core course	4				
Elective	4				
	16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies elective	4	Co-op	0	Co-op	0	Vacation	0
Communicati studies elective	4						
Elective	4						
ENGW 3314 or 3315	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Communication studies writing-intensive	4	Communication studies capstone	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Media and Screen Studies, BA

The Bachelor of Arts in Media and Screen Studies offers courses in analysis and practice. Required courses offer students an opportunity to obtain the critical-thinking skills necessary to better understand media content, media technology, and media production. Students then decide how many production and analysis courses they want to take. Choosing from a broad range of electives, students can take more than half their major in media and film production courses, can take a majority of courses that critically examine media content and technology, or can combine courses in other ways.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), and Analyzing and Using Data (AD) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Media and Screen Studies Common Requirements		
MSCR 1220	Media, Culture, and Society	4
MSCR 1320	Media and Social Change	4
MSCR 1420	Media History	4
Foundation Course (Production or Theory)		
Complete one of the following:		4
MSCR 1230	Introduction to Film Production	
MSCR 2220	Understanding Media and Film	
Diversity or Globalization Course		
Complete one of the following:		4
CINE 3392	Gender and Film	
MSCR 2325	Global Media	
MSCR 2505	Digital Feminisms	
MSCR 3437	Media and Identity	
Writing-Intensives		
Complete two of the following:		8
CINE 3500	Film Theory	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 4208	TV History	
Capstone (Production or Theory)		
Complete one of the following:		4
MSCR 4623	Theories of Media and Culture	
ARTD 5582	Collaborative Video and Community Engagement	
Media and Screen Studies Electives		
Complete five courses from the following list or media and screen studies courses not used to satisfy requirements above:		20
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3389	Screenwriting	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	

COMM 2450	Sound Production for Digital Media
COMM 3550	Television Field Production
COMM 3650	Television Studio Production
COMM 3750	Special Effects and Postproduction for Television
COMM 4650	Digital Editing for TV

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to fulfill degree requirements.

Media and Screen Studies Credit Requirement

52 total semester hours required in the major

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 1320	4	Media and screen studies elective	4	Vacation	0
MSCR 1220	4	ENGW 1111	4	Elective	4		
Elective	4	Foreign language core course	4				
Elective	4	Elective	4				
Foreign language core requirement	4						
		17		16		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1420	4	Media and screen studies elective	4	Vacation	0	Co-op	0
MSCR 1230 or 2220	4	Media and screen studies diversity/globalization course	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
		EEAM 2000		1			
		16		17		0	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Media and screen studies elective	4	Media and screen studies elective	4	Co-op	0

	Media and screen studies writing-intensive	4	Elective	4		
	Elective	4				
	Elective	4				
		0	16	8		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Media and screen studies elective	4	Vacation	0	Co-op
		Media and screen studies writing-intensive	4			
		Elective	4			
		Elective	4			
		0	16	0		0
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	MSCR 4623 or ARTD 5582	4			
		Elective	4			
		Elective	4			
		Elective	4			
		0	16			

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MSCR 1000	1	ENGW 1111	4	Media and screen studies elective	4	Vacation
		MSCR 1220	4	MSCR 1320	4	Elective
		Elective	4	Elective	4	
		Foreign language core course	4	Foreign language core course	4	
		Elective	4			
		17	16	8		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MSCR 1420	4	Co-op	0	Co-op	0	Media and screen studies elective
		MSCR 1230 or 2220	4			Elective
		Foreign language core course	4			

	Elective	4				
	EEAM 2000	1				
		17	0	0		8
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Media and screen studies writing-intensive	4	Co-op	0	Co-op	0	Vacation
		Media and screen studies diversity/globalization course	4			
		Elective	4			
		Elective	4			
		16	0	0		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Media and screen studies elective	4	Co-op	0	Co-op	0	Vacation
		Media and screen studies writing-intensive	4			
		Elective	4			
		Elective	4			
		16	0	0		0
Year 5						
Fall	Hours	Spring	Hours			
Media and screen studies elective	4	MSCR 4623 or ARTD 5582	4			
		Media and screen studies elective	4	Elective	4	
		Elective	4	Elective	4	
		Elective	4	Elective	4	
		16	16			

Total Hours: 130

Communication Studies and Graphic and Information Design, BA

The Department of Communication Studies and the Department of Art + Design offer a combined major in communication studies and graphic and information design. Students interested in the combined major integrate the study of communication skills and processes with the design of message and meaning, integrating text, image, and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	

COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Electives

Complete three COMM courses. 12

Graphic and Information Design Requirements

Code	Title	Hours
Introduction to Art and Design		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Graphic and Information Design Elective		
Complete one course with the corresponding tools course, if indicated, from the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	

ARTG 4552	Information Design 2
ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3

Integrative Requirement

Code	Title	Hours
Integrative Course		
COMM 4602 or ARTG 4551	Contemporary Rhetorical Theory Design Degree Project 2	4

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Communication Studies and Graphic and Information Design Major Credit Requirement

84 semester hours required in the major

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or COMM 1000	1	ENGW 1111	4	Communication studies elective	4	Vacation	0
COMM 1101	4	Communication studies foundation course	4	Foreign language core course	4		
ARTG 1250	4	COMM 1112 or 2301	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 2220 (with optional ARTF 2221)	4				
Elective	4						
		17		16		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	Communication studies elective	4				
ARTH 2210	4	Foreign language core course	4				
ARTG 2250 (with optional ARTG 2251)	4	ARTG 2252	4				
		EEAM 2000	1				
		16		17		0	
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies elective	4	Communication studies elective	4	Co-op	0
		ARTH 2215	4	Elective	4		
		ARTG 3350	4				
		ENGW 3314 or 3315	4				
		0		16		8	
						0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Vacation	0	Co-op	0
		Elective	4				
		ARTG 3451	4				
		ARTG 4550	4				
		0		16		0	
						0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	COMM 4602 or ARTG 4551	4				
		Graphic and information design elective	4				
		Elective	4				
		Elective	4				
		0		16			

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or COMM 1000	1	Communication studies foundation course	4	Communication studies elective	4	Vacation	0
COMM 1101	4	ENGW 1111	4	Foreign language elective	4		
ARTG 1250	4	ARTF 2220 (with optional ARTF 2221)	4				
ARTF 1122 (with optional ARTF 1123)	4	COMM 1112 or 2301	4				
Elective	4						
		17		16		8	
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op	0	Co-op	0	Communication studies elective	4
Foreign language core course	4					Communicati studies writing-intensive	4
Elective	4						
EEAM 2000	1						
ARTG 2250 (with optional ARTG 2251)	4						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies elective	4	Co-op	0	Co-op	0	Vacation	0
Foreign language core course	4						
ARTH 2215	4						
ARTG 2252	4						
	16		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Vacation	0
ARTH 2210	4						
ENGW 3314 or 3315	4						
ARTG 3350	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Communication studies writing-intensive	4	COMM 4602 or ARTG 4551	4
ARTG 3451	4	Graphic and information design elective	4
Elective	4	Elective	4
ARTG 4550	4	Elective	4
	16		16

Total Hours: 130

Communication Studies and Media and Screen Studies, BA

The Department of Communication Studies offers majors in communication studies and in media studies. The integrated major allows students to combine courses from both majors into a degree that integrates theory and practice. Students completing the combined major

have the knowledge necessary to engage the complex and dynamic relationship between communication, culture, and knowledge.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete five of the following:		20
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	

ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	
CINE 3389	Screenwriting	

Communication Studies Requirements

Code	Title	Hours
Introduction to College		
COMM 1000	Communication Studies at Northeastern	1

Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	

COMM 4631	Crisis Communication and Image Management	
Communication Electives		
Complete three COMM courses.		12

Integrative Requirement

Code	Title	Hours
Integrative Course		
COMM 4602 or CINE 3500	Contemporary Rhetorical Theory Film Theory	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to fulfill degree requirements.

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
COMM 1000	1	MSCR 2220	4	Elective	4	Vacation
MSCR 1220	4	COMM 1112 or 2301	4	Elective	4	
COMM 1101	4	Elective	4			
Elective	4	Elective	4			
Elective	4					
		17			16	8
0						
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MSCR elective	4	Co-op		Co-op		Elective
MSCR elective	4					Elective
COMM foundation course	4					
COMM cluster course	4					
EEAM 2000	1					
		17			0	0
8						
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MSCR elective	4	Co-op		Co-op		Vacation
COMM elective	4					
COMM writing-intensive	4					

MSCR elective	4				
	16	0	0	0	0
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
COMM elective	4	Co-op		Co-op	
COMM writing-intensive	4			Vacation	
MSCR advanced elective	4				
MSCR elective	4				
	16	0	0	0	0

Year 5			
Fall	Hours	Spring	Hours
COMM 4602 or CINE 3500	4	MSCR 4623	4
COMM elective	4	Elective	4
MSCR advanced elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Sample Four Years, No Co-ops

Year 1			
Fall	Hours	Spring	Hours
COMM 1000	1	MSCR 2220	4
MSCR 1220	4	COMM 1112 or 2301	4
COMM 1101	4	Elective	4
Elective	4	Elective	4
Elective	4		
		17	16

Year 2			
Fall	Hours	Spring	Hours
MSCR elective	4	COMM cluster course	4
MSCR elective	4	MSCR elective	4
COMM foundation course	4	MSCR elective	4
Elective	4	Elective	4
	16		16

Year 3			
Fall	Hours	Spring	Hours
COMM elective	4	COMM elective	4
COMM writing-intensive	4	COMM writing-intensive	4
MSCR elective	4	MSCR advanced elective	4

Elective	4	Elective	4
	16		16
Year 4			
Fall	Hours	Spring	Hours
COMM 4602 or CINE 3500	4	MSCR 4623	4
COMM elective	4	Elective	4
MSCR advanced elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

Communication Studies and Sociology, BA

The communication studies department and the sociology department offer an interdisciplinary combined major in communication studies and sociology. The combined major integrates the study of communication skills and processes with the study of social behaviors.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

NUPath requirements Societies and Institutions (SI) and Ethical Reasoning (ER) are met through the major course requirements.

NUPath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Difference and Diversity (DD), and Analyzing and Using Data (AD) may be met through electives in the major.

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1000	Communication Studies at Northeastern	1
COMM 1101	Introduction to Communication Studies	4
COMM 1112 or COMM 2301	Public Speaking Communication Research Methods	4

Foundation Course

Complete one of the following:	4
COMM 1210 Persuasion and Rhetoric	
COMM 1225 Communication Theory	
COMM 1231 Principles of Organizational Communication	
COMM 1255 Communication in a Digital Age	

Cluster Course

Complete one of the following:	4
COMM 1131 Sex, Relationships, and Communication	
COMM 2303 Global and Intercultural Communication	
COMM 2304 Communication and Gender	
COMM 2501 Communication Law	
COMM 2551 Free Speech in Cyberspace	

Writing-Intensive Courses

Complete two of the following:	8
COMM 3200 Mobile Communication	
COMM 3201 Health Communication	
COMM 3230 Interpersonal Communication	
COMM 3304 Communication and Inclusion	
COMM 3320 Political Communication	
COMM 3330 Argumentation Theory	
COMM 3400 Rhetoric of Science	
COMM 3414 Great Speakers and Speeches 2, 1930–Present	
COMM 3415 Communication Criticism	
COMM 3445 Public Relations Principles	
COMM 3501 Free Speech: Law and Practice	
COMM 3530 Communication and Sexualities	
COMM 3532 Theories of Conflict and Negotiation	
COMM 3610 Communication, Politics, and Social Change	
COMM 4535 Nonverbal Social Interaction	
COMM 4605 Youth and Communication Technology	
COMM 4631 Crisis Communication and Image Management	

Communication Studies Electives

Complete three COMM courses.	12
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Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
Introductory Electives		
Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1255	Sociology of the Family	

SOCL 1260	Gender in a Changing Society
SOCL 1275	Social Stratification
SOCL 1285	Deviant Behavior and Social Control
SOCL 1290	Juvenile Delinquency
SOCL 1295	Drugs and Society

Intermediate-Level Elective

Complete one of the following:	4
SOCL 2205	Law and Social Justice
SOCL 2268	Social Movements
SOCL 2270	Race and Ethnic Relations
SOCL 2358	Current Issues in Cities and Suburbs
SOCL 2450	Class, Power, and Social Change
SOCL 3440	Sociology of Human Service Organizations
SOCL 3408	Sociology of Organizations
SOCL 3441	Sociology of Health and Illness
SOCL 3465	Globalization and the Evolution of Human Societies
SOCL 3485	Environment, Technology, and Society
SOCL 3487	Applied Sociology: Practice and Theory

Advanced-Level Elective

Complete one of the following:	4
SOCL 4514	"The Wire" and the Study of Urban Inequalities
SOCL 4518	Law and Society in a Digital World
SOCL 4520	Race, Class, and Gender
SOCL 4523	Sexualities
SOCL 4528	Computers and Society
SOCL 4580	Special Topics in Sociology
SOCL 4992	Directed Study

Capstone and Integrative Requirements

Code	Title	Hours
Integrative Course		
Complete one of the following:		4
COMM 3320	Political Communication	
COMM 3532	Theories of Conflict and Negotiation	
SOCL 1246	Environment and Society	

Capstone/Senior Seminar Option

Complete one of the following two options:	8
<i>Communications Capstone Option</i>	

Complete one COMM course and one SOCL course from the following list:

COMM 4102	Health Communication Campaigns
COMM 4530	Communication and Quality of Life
COMM 4625	Online Communities
SOCL 3000 to SOCL 4999	

Sociology Senior Seminar Option

Complete SOCL 4600 and one COMM course from the following list:

SOCL 4600	Senior Seminar
COMM 3000 to COMM 4999	

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Communication Studies and Sociology Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	ENGW 1111	4	Communication studies elective	4	Vacation	0
COMM 1101	4	Communicati studies foundation course	4	Foreign language core course	4		
COMM 1112 or 2301	4	SOCL 2320	4				
SOCL 1101	4	SOCL 2321	4				
SOCL 2300	4						
		17			16		
					8		
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	Communicati studies elective	4				
Introductory sociology elective	4	Foreign language core course	4				
Elective	4	Introductory sociology elective	4				
		EEAM 2000	1				
		16			17		
					0		
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Elective	4	Co-op	0
		Intermediate sociology elective	4	Elective	4		
		Advanced writing in the disciplines course	4				

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Vacation	0	Co-op	0
		Communicati studies elective	4				
		Integrative course	4				
		Advanced sociology elective	4				
		0			16		
					0		
						0	

Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	Communication studies or sociology capstone	4		
		Communicati studies or sociology capstone elective	4		
		Elective	4		
		Elective	4		
		0			16

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	Communication studies foundation course	4	Foreign language core course	4	Vacation	0
COMM 1101	4	ENGW 1111	4	Elective	4		
COMM 1112 or 2301	4	SOCL 2320	4				
SOCL 1101	4	SOCL 2321	4				
SOCL 2300	4						
		17			16		
					8		
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op	0	Co-op	0	Communication studies elective	4
Introductory sociology elective	4					Introductory sociology elective	4
Foreign language core course	4						

EEAM 2000	1					
Elective	4					
	17	0	0			8
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
						Hours
Communication studies writing-intensive	4	Co-op	0	Co-op	0	Vacation
						0
Communication studies elective	4					
Foreign language core course	4					
Intermediate sociology elective	4					
	16		0		0	0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
						Hours
Communication studies elective	4	Co-op	0	Co-op	0	Vacation
						0
Elective	4					
Advanced sociology elective	4					
Advanced writing in the disciplines course	4					
	16		0		0	0
Year 5						
Fall	Hours	Spring	Hours			
Communication studies writing-intensive	4	Communication studies or sociology capstone	4			
Integrative requirement	4	Communication studies or sociology capstone elective	4			
Elective	4	Elective	4			
Elective	4	Elective	4			
	16		16			
Total Hours: 130						

Communication Studies and Theatre, BA

The Department of Communication Studies and the Department of Sociology offer an interdisciplinary combined major in communication studies and theatre. The combined major integrates the study of communication skills and processes with the study of theater history, playwriting, acting, and directing, as well as costume design, lighting, and scenery.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Creative Expression/Innovation (EI), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1000	Communication Studies at Northeastern	1
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course

Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course

Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive Courses

Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	

COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete three COMM courses. 12

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Choose one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Intermediate or Advanced Technique		
Choose two of the following:		8
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design (THTR 3200 Queer Theatre)	
THTR 2400	Scenic Design	
THTR 3200	Queer Theatre and Performance	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4

Integrative Requirements

Code	Title	Hours
Theatre Capstone		
THTR 4702	Capstone Rehearsal and Performance	4
Communication Studies Integrative Course		
Complete one of the following:		4
COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	

Communication Studies Major Grade Requirement

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

130 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
COMM 1000 or THTR 1000	1	COMM 1112 or 2301	4	Communication studies foundation course	4	Vacation	4		
COMM 1101	4	THTR 1131	4	Communicatc studies elective	4				
THTR 1101	4	Foreign language course	4						
THTR 1120	4	ENGW 1111	4						
Foreign language elective	4								
		17		16		8		0	
Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Communication studies cluster course	4	Co-op	4	Co-op	4	Vacation	4		
Communicatc studies elective	4								
THTR 2325	4								
EEAM 2000	1								
Theatre text and context elective	4								
		17		0		0		0	
Year 3									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Intermediate or advanced THTR technique course	4	Co-op	4	Co-op	4	Communication studies writing-intensive	4		

Foreign language culture course	4			Communicati studies elective	4
ENGW 3314 or 3315	4				
THTR 1270	4				
	16		0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op		Co-op		Vacation	
Intermediate or advanced technique elective	4						
THTR 1100	1						
Elective	4						
Elective	4						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
THTR 4702	4	Elective	4
Communicati studies integrative course	4	Elective	4
Elective	4	Elective	4
Elective	4	THTR 2000	1
		Elective	4
	16		17

Total Hours: 132

Computer Science and Communication Studies, BS

The computer science and communication studies combined major integrates practical skills and theory. Students will gain both a strong computer science foundation and a deep understanding of the major conceptual frameworks for human communication—plus how to apply this knowledge to solve problems in today's society.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
CS 4550	Web Development	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

DS 2000 or higher, except DS 4900

IS 2000 or higher, except IS 4900

Communication Studies Courses

Code	Title	Hours
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Communication Studies Common Requirements

COMM 1101	Introduction to Communication Studies	4
COMM 1112 or COMM 2301	Public Speaking Communication Research Methods	4

Foundation Course

Complete one of the following: 4

COMM 1210	Persuasion and Rhetoric
COMM 1225	Communication Theory
COMM 1231	Principles of Organizational Communication
COMM 1255	Communication in a Digital Age

Cluster Course

Complete one of the following: 4

COMM 1131	Sex, Relationships, and Communication
COMM 2303	Global and Intercultural Communication
COMM 2304	Communication and Gender
COMM 2501	Communication Law
COMM 2551	Free Speech in Cyberspace

Writing-Intensive

Complete two of the following:	8
COMM 3200	Mobile Communication
COMM 3201	Health Communication
COMM 3230	Interpersonal Communication
COMM 3304	Communication and Inclusion
COMM 3320	Political Communication
COMM 3330	Argumentation Theory
COMM 3400	Rhetoric of Science
COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete three courses in the following range: ¹	12
COMM 1131 to COMM 4996	

¹ Special Topics in Communication Studies (COMM 4912), and Junior/Senior Honors Project 1 (COMM 4970) are excluded.

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	

ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines
COMM 3409	Advocacy Writing ¹

² If Advocacy Writing (COMM 3409) is selected it will also satisfy a communication studies elective requirement. One additional general elective will be then required in its place.

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and COMM courses

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	COMM 1112 or 2301	4				
ENGW 1111	4	Elective	4				
COMM 1101	4						
		19		17		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Vacation	0
CS 3500	4						
MATH 1341	4						

Communication studies foundation course	4						
Elective	4						
		17	0	0	0	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	Elective	4
CS elective	4					Elective	4

Communication studies cluster course	4						
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Communication studies writing-intensive course	4						
		16	0	0	0	8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Advanced writing	4	Co-op	0	Co-op	0	Elective	4
Communication studies elective	4					Elective	4
CS elective	4						
Elective	4						
		16	0	0	0	8	

Year 5

Fall	Hours	Spring	Hours
Communication studies writing-intensive course	4	CS 4000	1
Communication studies elective	4	CS 4500	4
CS elective	4	CS 4550 and CS 4501	4
Computing and social issues	4	Communication studies elective	4
		Elective	4
		16	17

Total Hours: 134

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341	4		
CS 2500 and CS 2501	5	COMM 1112 or 2301	4				

ENGW 1111	4	Elective	4
COMM 1101	4		
		19	17
			8
			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Elective	4
Communication studies foundation course	4					Elective	4
CS elective	4						
CS 3000	4						
Elective	4						
		17	0	0	0	8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op	0	Co-op	0	Elective	4
Communication studies cluster course	4					ENGW 3302 or 3315	4
Communication studies writing-intensive course	4						
CS elective	4						
Elective	4						
		17	0	0	0	8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
CS elective	4	CS 4500 and CS 4501	4	Elective	4
Communication studies writing-intensive course	4	CS 4550	4	Elective	4
Communication studies elective	4	Communication studies elective	4		
Computing and social issues	4	Communication studies elective	4		
		16	16	8	

Total Hours: 134

English and Communication Studies, BA

The English department and the communication studies department offer an interdisciplinary combined major in English and communication studies. Broadly speaking, students in the combined major in English and communication studies at Northeastern integrate the study of literature and writing with studies of media, social, corporate, and political communications.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	

ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	
Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	

ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children’s Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following:		4
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer’s Marketplace	

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4

COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course

Complete one of the following: 4

COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course

Complete one of the following: 4

COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive Courses

Complete two of the following: 8

COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	

Communication Studies Electives

Complete three additional COMM courses. 12

Integrative Requirement

Code	Title	Hours
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Integrative English Course

Complete one of the following: 4

ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3381	The Practice and Theory of Teaching Writing	

Integrative Communication Studies Course

COMM 3415 Communication Criticism 4

or COMM 4602	Contemporary Rhetorical Theory	
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Communication Studies Grade Requirements

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Human Services and Communication Studies, BA

The intersection of communications studies and human services practices spans several domains. Nonprofit organizations depend on communications professionals to effectively represent their work to the community, partner organizations, and funders. Knowledge and skills developed in communications studies also service human services professionals working in the political realm as they seek to promote impactful social policies.

The human services major is designed to prepare students for careers in social change by providing them with the theoretical and skill-based background necessary for practice and research. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 3700	Research Methods for Human Services	4
HUSV 3900	Introduction to Social Policy	4
Organization		

SOCL 3440	Sociology of Human Service Organizations	4
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Internship

HUSV 4994	Human Services Internship	6
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Human Services Electives

Complete two additional HUSV courses.	8
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Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:	4	
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:	4	
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:	8	
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	
Communication Studies Electives		
Complete three of the following:	12	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	
COMM 1511	Communication and Storytelling	

COMM 1990	Elective
COMM 2105	Social Networks
COMM 2350	Producing for the Entertainment Industry
COMM 2450	Sound Production for Digital Media
COMM 2990	Elective
COMM 3306	International Communication Abroad
COMM 3409	Advocacy Writing
COMM 3451	Advertising Practices
COMM 3534	
COMM 3550	Television Field Production
COMM 3650	Television Studio Production
COMM 3990	Elective
COMM 4650	Digital Editing for TV
COMM 4940	Special Topics in Media Production
COMM 4990	Elective
COMM 4992	Directed Study
COMM 4993	Independent Study
COMM 4994	Internship in Communication

Capstone

Code	Title	Hours
Communications Capstone Option		
Complete one of the following:		4
COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	
COMM 4625	Online Communities	
Complete one additional HUSV elective.		4
Human Services Capstone Option		
HUSV 4700	Senior Seminar in Human Services	4
Complete one course in the following range:		4
COMM 3000 to COMM 4999		

Integrative Course

Code	Title	Hours
HUSV 3590	Nonprofit Communications	4

Program Requirement

128 total semester hours required

Linguistics and Communication Studies, BA

In the combined major in linguistics and communication studies, students have an opportunity to learn about the formal structures and analysis of human languages across multiple levels (sounds, words, phrases and sentences, meaning) while simultaneously mastering the fundamentals of effective communication and of communication theory and practice. Students receive extensive training in writing and speaking, both for a technical audience and more generally; and they explore the role of language and communication in society, both from a broad theoretical perspective and in narrower, more focused and applied domains.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Linguistics Requirements

Code	Title	Hours
Required Linguistics Courses		
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4
LING 3424	Morphology	4
or LING 3452	Semantics	
Linguistics Electives		
Complete two of the following, not used to fulfill the linguistics required courses above:		8
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
or LING 4970	Junior/Senior Honors Project 1	
or LING 4971	Junior/Senior Honors Project 2	
or LING 4991	Directed Study Research	
PSYC 3464	Psychology of Language	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	

Communication Studies Requirements

Code	Title	Hours
Communication Studies Required Courses		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 2301	Communication Research Methods	4
Foundation Course		
Complete one course from the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	

COMM 1231 Principles of Organizational Communication

COMM 1255 Communication in a Digital Age

Cluster Course

Complete one course from the following: 4

COMM 1131 Sex, Relationships, and Communication

COMM 2303 Global and Intercultural Communication

COMM 2304 Communication and Gender

COMM 2501 Communication Law

COMM 2551 Free Speech in Cyberspace

Writing-Intensive Course

Complete one course from the following: 4

COMM 3200 Mobile Communication

COMM 3201 Health Communication

COMM 3230 Interpersonal Communication

COMM 3304 Communication and Inclusion

COMM 3320 Political Communication

COMM 3330 Argumentation Theory

COMM 3400 Rhetoric of Science

COMM 3414 Great Speakers and Speeches 2, 1930–Present

COMM 3415 Communication Criticism

COMM 3445 Public Relations Principles

COMM 3501 Free Speech: Law and Practice

COMM 3530 Communication and Sexualities

COMM 3532 Theories of Conflict and Negotiation

COMM 3610 Communication, Politics, and Social Change

COMM 4535 Nonverbal Social Interaction

COMM 4605 Youth and Communication Technology

COMM 4631 Crisis Communication and Image Management

Communication Studies Electives

Complete two additional COMM courses. 8

Integrative Requirement

Code	Title	Hours
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Sociolinguistics

LING 3442	Sociolinguistics	4
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Communication Studies Integrative Course

Complete one of the following, not used to fulfill above requirements: 4

COMM 3415 Communication Criticism

COMM 4602 Contemporary Rhetorical Theory

Capstone Experience

Complete one of the following, not used to fulfill above requirements: 4

LING 4654 Seminar in Linguistics

COMM 4102 Health Communication Campaigns

COMM 4602 Contemporary Rhetorical Theory

COMM 4608 Strategic Communication Capstone

COMM 4625 Online Communities

Linguistics and Communication Studies Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Media Arts and Communication Studies, BA

The Department of Communication Studies and the Department of Art + Design offer a combined major in media arts and communication studies. Students interested in the combined major integrate the study of communication skills and processes with the study of the creation of the narrative arts, required for professional work in documentary film, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated films.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath attributes Creative Expression and Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements.

In order to graduate, students must complete Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) in their electives.

Media Arts Requirements

Code	Title	Hours
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Art and Design at Northeastern

ARTF 1000	Art and Design at Northeastern	1
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Art and Design Foundations

ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
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ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
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Drawing Fundamentals

ARTF 1120 or ARTF 1121	Observational Drawing Conceptual Drawing	4
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Art and Design History

ARTH 2210	Modern Art and Design History	4
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ARTH 2212	Survey of the Still and Moving Image	4
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Project Required Course

ARTD 4530	Media Arts Degree Project 1	4
Media Art Basics Electives		
Complete two of the following:		8
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
Art and Design Electives		
Complete two of the following:		8
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTD 2100	Narrative Basics	
ARTG 2300	Business Literacy for Design and Media	
ARTE 2500	Art and Design Abroad: Studio	
ARTE 2501	Art and Design Abroad: History	
ARTE 4901	Special Topics in Art and Design Studio	
ARTE 3901	Art and Design Special Topics	
ARTH 1100	Interactive Media and Society	
ARTH 1110	Global Art and Design History: Ancient to Medieval	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2211	Contemporary Art and Design History	
ARTH 2213	Nineteenth-Century Art	
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 4570	Animation 2	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTD 4670	Media Arts Degree Project 2	
ARTD 5582	Collaborative Video and Community Engagement	
ARTS 2330	Sculpture Basics	
ARTS 2340	Painting Basics	

ARTS 2341	Figure Drawing
ARTS 3449	Drawing in Mixed Media

Communication Studies Courses

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	
Communication Studies Electives		
Complete three COMM courses.		12
Integrative Requirement		
Code	Title	Hours
Bridge/Integrative Requirement		
COMM 3415	Communication Criticism	4

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or COMM 1000	1	ARTF 2220 (with optional ARTF 2221)	4	Comm elective	4	Vacation	0
ARTF 1122 (With optional ARTF 1123)	4	ARTH 2212	4	Elective	4		
ARTH 2210	4	COMM 1112 or 2301	4				
COMM 1101	4	Drawing elective	4				
ENGW 1111	4						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media arts basics elective	4	Co-op	0	Co-op	0	Elective	4
COMM foundation course	4					Elective	4
COMM cluster course	4						
Elective	4						
EEAM 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media arts basics elective	4	Co-op	0	Co-op	0	Vacation	0
Art + design elective	4						
COMM elective	4						
COMM writing-intensive	4						
	16		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Art + design elective	4	Co-op	0	Co-op	0	Vacation	0
COMM elective	4						

COMM writing-intensive	4				
Elective	4				
	16		0		0

Year 5

Fall	Hours	Spring	Hours
ARTD 4530	4	ARTD 4670 (or COMM Capstone)	4
COMM 3415	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Media and Screen Studies and English, BA

The media and screen studies program and the Department of English offer a combined major in media and screen studies and English. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone literatures. Majors become familiar with writing practices and media from the Middle Ages through the present, from the quill pen to computer code.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Media and Screen History		
MSCR 4208	TV History	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete three of the following:		12
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
CINE 3500	Film Theory	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	

Pre-Nineteenth-Century Literature

Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods

Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	

ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing

ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
Integrative Courses		
CINE 3500	Film Theory	4
ENGL 1450	Reading and Writing in the Digital Age	4
or ENGL 3340	Technologies of Text	

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Media and screen elective	4	Vacation	
MSCR 1220	4	Media and screen history elective	4	Elective	4		
ENGL 1400	4	ENGL pre-19th-century literature elective	4				
ENGL 1160 or 1410	4	ENGL 19th-century literature elective	4				
Elective	4						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media and screen elective	4	Co-op		Co-op		Media and screen elective	4
20th- and 21st-century literature elective	4					Elective	4
ENGL diversity elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGL theories and methods elective	4	Advanced MSCR elective	4	Vacation	0	Co-op	
ENGL elective	4	ENGL comparative elective	4				
Advanced MSCR elective	4	Elective	4				
Elective	4	ENGL 1450 or 3340	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGL writing elective	4	Vacation		Vacation	
		CINE 3500	4				
		Elective	4				
		Elective	4				
	0		16		0		0

Year 5

Fall	Hours
MSCR 4623	4
ENGL 4710 or 4720	4
ENGL elective	4
Elective	4
	16

Total Hours: 130

Media and Screen Studies and History, BA

The Media and Screen Studies Program and the Department of History offer a combined major in media and screen studies and history. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of local and regional histories as well as of the global exchanges between nations, regions, and cultures.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four courses from the following:		16
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3446	Topics in Documentary Production	
MSCR 1230	Introduction to Film Production	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3420	Digital Media Culture	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	

MSCR 3437	Media and Identity
Advanced Media and Screen Electives	
Complete two courses from the following: 8	
CINE 3389	Screenwriting
CINE 3392	Gender and Film
CINE 3500	Film Theory
CINE 3920	Topics in Film Studies
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory-Level Course		
Complete one course in the following range:		4
HIST 1001–HIST 1999		
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Complete one course from the following:		4
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete three courses in the following range:		12
HIST 2303–HIST 5999		
Advanced History		
Complete one course in the following range:		4
HIST 3000–HIST 5999		
HIST 4701	Capstone Seminar	
Capstone		
		4

Integrative Requirement

Code	Title	Hours
HIST 1279	History of the American Film Industry	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

130 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
HIST 1200	1	Intro-level HIST course	4				
HIST 1201	4	Elective	4				
Elective	4						
ENGW 1111	4						
		18			16	8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
MSCR elective	4					Elective	4
HIST 2301	4						
HIST 2302	1						
Elective	4						
EEAM 2000	1						
		18			0	0	8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	
Pre-1800 history elective	4						
Intermediate/advanced history elective 1	4						
Elective	4						
		16			0	0	0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Advanced MSCR elective	4	Advanced MSCR elective	4	Vacation		Vacation	0
Intermediate/advanced history elective 2	4	Intermediate/advanced history elective 3	4				
Elective	4	Advanced history elective	4				
HIST 1279	4	Elective	4				
		16			16	0	0
Year 5							
Fall	Hours						
MSCR 4623	4						
HIST capstone	4						
Elective	4						

Elective	4
	16
Total Hours: 132	

Media and Screen Studies and Journalism, BA

A Bachelor of Arts in Journalism and Media and Screen Studies is designed for the student who is interested in pursuing a career as a journalist specializing in the film industry.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), Difference and Diversity (DD), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
or JRNL 1000	Journalism at Northeastern	
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	

MSCR 1230	Introduction to Film Production
MSCR 1310	Introduction to Digital Media Culture
MSCR 2302	Advertising and Promotional Culture
MSCR 2325	Global Media
MSCR 2895	Film Analysis
MSCR 3210	Special Topics in Media and Screen Studies
MSCR 3420	Digital Media Culture
MSCR 3422	Media Audiences
MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity
ARTD 3480	Video: Sound and Image
ARTD 3485	Experimental Video
ARTH 2212	Survey of the Still and Moving Image
Advanced Media and Screen Electives	
Complete two of the following:	
CINE 3500	Film Theory
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Journalism Requirements

Code	Title	Hours
Journalism Foundations		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox (A grade of C or higher is required)	5
JRNL 1150	Understanding Today's News	4
JRNL 2201	Journalism 2: Intermediate Reporting (A grade of C or higher is required)	4
Journalism and Advanced Writing		
JRNL 2301	Visual Storytelling in Journalism (A grade of C or higher is required)	4
Television News		
JRNL 5314	Video News Reporting and Producing	4
Ethics and Issues		
JRNL 4650	Ethics and Issues in Journalism	4
Journalism Elective		
Complete three courses in the following range:		12
JRNL 2000–JRNL 5999		
Integrative Requirement		
The following course also counts toward the media and screen studies requirements above.		
Code	Title	Hours
Integrative Course		
MSCR 4623	Theories of Media and Culture	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000 or JRNL 1000	1	JRNL 1101 and JRNL 1102	5	Foreign language core course	4	Vacation	
MSCR 1220	4	MSCR 2220	4	Elective	4		
JRNL 1150	4	Elective	4				
ENGW 1111	4	Foreign language core course	4				
MATH 1215	4						
		17		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op		Co-op		Elective	4
EEAM 2000	1					Elective	4
MSCR elective	4						
MSCR elective	4						
Foreign language core course	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op		Co-op		Vacation	
JRNL 5307	4						
MSCR elective	4						
Elective	4						
		16		0		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 5314	4	Co-op		Co-op		Vacation	
JRNL elective	4						
MSCR advanced elective	4						
MSCR elective	4						
		16		0		0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 4650	4	MSCR 4623	4				
JRNL 5309	4	Elective	4				

MSCR advanced elective	4	Elective	4
Elective	4	Elective	4
		16	

Total Hours: 131

Sample Four Years, No Co-ops

Year 1			
Fall	Hours	Spring	Hours
MSCR 1000 or JRNL 1000	1	JRNL 1101 and JRNL 1102	5
JRNL 1150	4	MSCR 2220	4
MSCR 1220	4	Elective	4
ENGW 1111	4	Foreign language core course	4
MATH 1215	4		
		17	
Year 2			
Fall	Hours	Spring	Hours
JRNL 2201	4	JRNL 2301	4
MSCR elective	4	JRNL 5307	4
MSCR elective	4	MSCR elective	4
Foreign language core course	4	Foreign language core course	4
		16	
Year 3			
Fall	Hours	Spring	Hours
JRNL 5314	4	JRNL 4650	4
MSCR elective	4	JRNL 5309	4
Elective	4	MSCR advanced elective	4
Elective	4	Elective	4
		16	
Year 4			
Fall	Hours	Spring	Hours
JRNL elective	4	MSCR 4623	4
MSCR advanced elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	

Total Hours: 130

Media and Screen Studies and Media Arts, BA

The Media and Screen Studies Program and the Department of Art + Design offer a combined major in media studies and media arts. Students pursuing the combined major are able to integrate the theory and practice of contemporary media studies with the deep appreciation of the narrative arts that is required for professional work in documentary film, game art and promotion, visualization, motion graphics, interactive art, illustration, and short animated films.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3446	Topics in Documentary Production	
MSCR 1230	Introduction to Film Production	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
Advanced Media and Screen Electives		
Complete two of the following:		8
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3500	Film Theory	

CINE 3920	Topics in Film Studies
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Media Arts Courses

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Drawing Fundamentals		
ARTF 1120	Observational Drawing	4
or ARTF 1121	Conceptual Drawing	
Art + Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2212	Survey of the Still and Moving Image	4
Degree Project		
ARTD 4530	Media Arts Degree Project 1	4
Media Arts Basic Electives		
Complete two of the following sets:		8
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2370	Animation Basics (with optional ARTD 2371)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
Art + Design Electives		
Complete two of the following or any drawing fundamental elective/media arts basic elective not previously taken:		8
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTD 3460	Photography 1	
ARTD 3470	Animation 1	
ARTD 3471	Virtual Environment Design	
ARTD 3472	Character Design for Animation	
ARTD 3473	Animation for Games	
ARTD 3480	Video: Sound and Image	
ARTD 4565	Photography 2	
ARTD 3485	Experimental Video	
ARTD 4575	Animation 3	
ARTD 4577	Digital Sculpture and Model Making	
ARTD 5582	Collaborative Video and Community Engagement	
ARTD 4660	Studio Photography	
ARTD 4661	Alternative Photographic Processes	
ARTD 4670	Media Arts Degree Project 2	
ARTD 2100	Narrative Basics	

ARTG 2300	Business Literacy for Design and Media
ARTE 2500	Art and Design Abroad: Studio
ARTE 2501	Art and Design Abroad: History
ARTE 3901	Art and Design Special Topics
ARTE 4901	Special Topics in Art and Design Studio
ARTH 1110	Global Art and Design History: Ancient to Medieval
ARTH 1111	Global Art and Design History: Renaissance to Modern
ARTH 2211	Contemporary Art and Design History
ARTH 2213	Nineteenth-Century Art
ARTH 5100	Contemporary Art Theory and Criticism
ARTH 5200	Issues in Contemporary Art
ARTH 5400	Contemporary Visual Culture
ARTG 2250	Typography 1 (with optional ARTG 2251)
ARTS 2330	Sculpture Basics
ARTS 2340	Painting Basics
ARTS 2341	Figure Drawing
ARTS 3449	Drawing in Mixed Media

Integrative Courses

Code	Title	Hours
CINE 3500	Film Theory	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to fulfill degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

SAMPLE FIVE YEARS, TWO CO-OPS

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 1000 or MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	ARTF 2220 (with optional ARTF 2221)	4	Elective	4		
ARTF 1122 (with optional ARTF 1123)	4	ARTH 2212	4				
ARTH 2210	4	ARTF 1120 or 1121	4				
ENGW 1111	4						
	17		16		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
MSCR elective	4						

Media arts basics elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		4
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	co-op		co-op		Elective	4
MSCR elective	4						
Media arts basics elective	4						
Art + design elective	4						
	16		0		0		4
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR advanced elective	4	Co-op		Co-op		Vacation	
Art + design elective	4						
Elective	4						
Elective	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR advanced elective	4	MSCR 4623	4				
ARTD 4530	4	CINE 3500	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				

Total Hours: 130

Media and Screen Studies and Philosophy, BA

The Media and Screen Studies Program and the Department of Philosophy and Religion offer a combined major in media and screen studies and philosophy. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of questions and theories related to morality, society, religion, and the natural and social sciences.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Analyzing and Using Data (AD), and Difference and Diversity (DD), may be met through electives in the major.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	

Advanced Media and Screen Electives

Complete two of the following:		8
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	
CINE 3500	Film Theory	
CINE 3920	Topics in Film Studies	

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Restricted Philosophy Electives		
Complete three of the following with at least one course at the 4000 or 5000 level:		12
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4510	Philosophy of Science	
PHIL 4500	Theory of Knowledge	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Philosophy Electives

Complete three additional electives from the philosophy department. 12

Integrative Requirement

Code	Title	Hours
CINE 3500	Film Theory	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	MSCR elective	4	Vacation	0
MSCR 1220	4	MSCR elective	4	Elective	4		
PHIL 1115	4	PHIL 2325 or POLS 2325	4				
ENGW 1111	4	Elective	4				
Elective	4						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EEAM 2000	1	Restricted PHIL elective 1	4	MSCR elective	4	Co-op	0
MSCR elective	4	Advanced MSCR elective 1	4	Elective	4		
PHIL 2330	4	PHIL elective	4				
Elective	4	Elective	4				
PHIL elective	4						
	17		16		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Restricted PHIL elective 2	4	Vacation	0	Co-op	0
		Advanced MSCR elective 2	4				
		PHIL elective	4				
		Elective	4				
	0		16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		MSCR 4623	4	Vacation	0	Vacation	0
		Restricted PHIL elective 3	4				
		CINE 3500	4				
		Elective	4				
	0		16		0		0

Year 5

Fall	Hours
Elective	4
Elective	4
Elective	4
Elective	4
	16

Total Hours: 130

Media and Screen Studies and Political Science, BA

The Media and Screen Studies Program and the Department of Political Science offer a combined major in media and screen studies and political science. The combined major integrates the analysis, research, and production of traditional and emerging media along with courses on American government, comparative politics, international relations, and research methods.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Analyzing and Using Data (AD) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1

Required Courses

MSCR 1220	Media, Culture, and Society	4
MSCR 2220	Understanding Media and Film	4
MSCR 4623	Theories of Media and Culture	4

Elective Courses

Complete four of the following: 16

CINE 2160	Narrative Filmmaking
CINE 3389	Screenwriting
CINE 3392	Gender and Film
CINE 3446	Topics in Documentary Production
CINE 3920	Topics in Film Studies
MSCR 1230	Introduction to Film Production

MSCR 1310	Introduction to Digital Media Culture
MSCR 2302	Advertising and Promotional Culture
MSCR 2325	Global Media
MSCR 2895	Film Analysis
MSCR 3210	Special Topics in Media and Screen Studies
MSCR 3420	Digital Media Culture
MSCR 3422	Media Audiences
MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity
ARTD 3480	Video: Sound and Image
ARTD 3485	Experimental Video
ARTH 2212	Survey of the Still and Moving Image

Advanced Elective Courses

Complete two of the following:		8
CINE 3500	Film Theory	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	

Political Science Requirements

Code	Title	Hours
Required Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4

Political Thought

Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Politics in Media/Art

Complete two courses. Consult academic advisor for additional courses.		8
POLS 2368	Music and Politics in America and Abroad	

Elective Courses

Complete two POLS courses or complete a concentration.		8
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Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 145).

- Identity, Culture, and Politics (p.)
- Law and Legal Studies (p.)

Integrative Requirements

Code	Title	Hours
Required Courses		
MSCR 4602	Media and Democracy	4
POLS 3320	Politics and Mass Media	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	MSCR elective	4	Vacation	
MSCR 1220	4	POLS 1155 and POLS 1156	4	Elective	4		
POLS 1150 and POLS 1151	4	MSCR elective	4				
ENGW 1111	4	Elective	4				
Elective	4						
		17			16		
					8		
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160 and POLS 1161	4	Co-op		Co-op		Elective	4
POLS 2400	4					Elective	4
MSCR elective	4						
Advanced MSCR elective	4						
EEAM 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Political thought elective	4	MSCR elective		4 Vacation		0 Co-op	
Advanced MSCR elective	4	Politics in media/art elective		4			
Elective	4	Elective		4			
Elective	4	Elective		4			
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Politics in media/art elective		4 Vacation		Vacation	
		POLS elective		4			
		Elective		4			
		MSCR 4602		4			
	0		16		0		0

Year 5

Fall	Hours
MSCR 4623	4
POLS 3320	4
POLS elective	4
Elective	4
	16

Total Hours: 130

Media and Screen Studies and Sociology, BA

The Media and Screen Studies Program and the Department of Sociology and Anthropology offer a combined major in media and screen studies and sociology. The combined major integrates the analysis, research, and production of traditional and emerging media along with the critical perspective needed for studying the social and cultural arrangements in which people live, for understanding how societies function, for investigating the conditions under which people change their institutions, and for describing the modes and conditions of cooperation that make social life possible.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
ARTD 3480	Video: Sound and Image	

ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3500	Film Theory	

Sociology Requirements

Code	Title	Hours
Core Courses in Sociology		
ANTH 1101	Peoples and Cultures	4
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
SOCL 4600	Senior Seminar	4
Foundational Competency—Courses Numbered SOCL 1200 to SOCL 2900		
Complete two of the following:		8
SOCL 1228	Social Problems	
SOCL 1245	Sociology of Poverty	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1280	The 21st-Century Workplace	
SOCL 2205	Law and Social Justice	
SOCL 2268	Social Movements	
SOCL 2270	Race and Ethnic Relations	
SOCL 2450	Class, Power, and Social Change	
Foundational Competency—Courses Numbered 3000 to 4999		
Complete one of the following:		4
ANTH 3120	Consumer Cultures	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
ANTH 4580	Special Topics in Anthropology	
SOCL 3465	Globalization and the Evolution of Human Societies	
SOCL 4518	Law and Society in a Digital World	
SOCL 4520	Race, Class, and Gender	
SOCL 4580	Special Topics in Sociology	

Integrative Requirement

Code	Title	Hours
Integrative Courses		
MSCR 3437	Media and Identity	4
SOCL 1246	Environment and Society	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Foreign language core course	4	Vacation	0
MSCR 1220	4	MSCR elective	4	Elective	4		4
SOCL 1101	4	Foreign language core course	4				
ANTH 1101	4	SOCL 2300	4				
ENGW 1111	4						
		17		16		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op	4	Co-op	4	Elective	4
Advanced MSCR elective	4					Elective	4
Foreign language core course	4						
EEAM 2000	1						
SOCL 2320	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2321	4	Co-op	4	Co-op	4	Vacation	0
SOCL foundational competency elective 1	4						
MSCR elective	4						
Elective	4						
		16		0		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL foundational competency elective 2	4	MSCR 3437	4	Vacation	4	Vacation	0
MSCR elective	4	MSCR 4623	4				

Advanced MSCR elective	4 SOCL foundational competency elective	4		
SOCL 1246	4 Elective	4		
	12-16	16	0	0

Year 5

Fall	Hours
SOCL 4600	4
Elective	4
Elective	4
Elective	4
	16

Total Hours: 126-130

Media and Screen Studies and Theatre, BA

This major is designed for students who want to combine a knowledge of the art of theatre with the theories and conceptual frameworks of media and film studies. It offers both classroom and experiential learning in areas of acting, directing, writing, and design with related studies in screenwriting, media technology, and media production. Students develop a personalized technique for the practices of making theatre, film (documentary and fiction), and television as engaged citizens and creative artists.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirement Natural and Designed World (ND) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1

Introduction to Media Studies

MSCR 1220	Media, Culture, and Society	4
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Introduction to Screen Studies

MSCR 2220	Understanding Media and Film	4
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Advanced Theory

MSCR 4623	Theories of Media and Culture	4
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Media and Screen Studies Electives

Complete four of the following:		16
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CINE 2160	Narrative Filmmaking
CINE 3389	Screenwriting
CINE 3392	Gender and Film
CINE 3446	Topics in Documentary Production
CINE 3920	Topics in Film Studies
MSCR 1230	Introduction to Film Production
MSCR 1310	Introduction to Digital Media Culture
MSCR 2302	Advertising and Promotional Culture
MSCR 2325	Global Media
MSCR 2895	Film Analysis
MSCR 3210	Special Topics in Media and Screen Studies
MSCR 3420	Digital Media Culture
MSCR 3422	Media Audiences
MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity
ARTD 3480	Video: Sound and Image
ARTD 3485	Experimental Video
ARTH 2212	Survey of the Still and Moving Image

Advanced Media and Screen Electives

Complete two of the following:		8
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CINE 3500	Film Theory
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Theatre Requirements

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	

Making Theatre

THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
Intermediate or Advanced Technique		
Complete two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirement

Code	Title	Hours
Media and Screen Studies Capstone		
MSCR 4623	Theories of Media and Culture	4
Theatre Capstone		
THTR 4702	Capstone Rehearsal and Performance	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

130 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
THTR 1101	4	THTR 1131	4				
THTR 1120	4	THTR 1270	4				
ENGW 1111	4						
		17			16		
				8			0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Foreign language core course	4
Advanced MSCR elective	4					Elective	4
THTR 2325	4						
THTR texts and context elective	4						
EEAM 2000	1						
THTR 1100	1						
		18			0	0	
						8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	0
Advanced MSCR elective	4						
Intermediate or advanced technique elective	4						
Foreign language core course	4						
THTR 2000	1						
		17			0	0	
						0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	MSCR 4623	4	Vacation		0	Vacation
Intermediate or advanced technique elective	4	Elective	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
		16			16	0	
						0	

Year 5	
Fall	Hours
THTR 4702	4
Elective	4
Elective	4
Elective	4
16	

Total Hours: 132

Media and Screen Studies and Theatre, BS

This major is designed for students who want to combine a knowledge of the art of theatre with the theories and conceptual frameworks of

media and film studies. It offers both classroom and experiential learning in areas of acting, directing, writing, and design with related studies in screenwriting, media technology, and media production. Students develop a personalized technique for the practices of making theatre, film (documentary and fiction), and television as engaged citizens and creative artists.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirement Natural and Designed World (ND) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Studies		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Studies Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	

MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity
ARTD 3480	Video: Sound and Image
ARTD 3485	Experimental Video
ARTH 2212	Survey of the Still and Moving Image
Advanced Media and Screen Electives	
Complete two of the following:	
CINE 3500	Film Theory
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Theatre Requirements

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
Intermediate or Advanced Technique		
Complete two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	

THTR 3300	Devised Theatre Project: Collaborative Performance
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Intermediate or advanced technique elective	4
Elective	4
THTR 2000	1
<hr/>	
	17
	0
	0
	0

Integrative Requirement

Code	Title	Hours
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Media and Screen Studies Capstone

MSCR 4623	Theories of Media and Culture	4
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Theatre Capstone

THTR 4702	Capstone Rehearsal and Performance	4
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Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

130 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
THTR 1101	4	THTR 1131	4				
THTR 1120	4	THTR 1270	4				
ENGW 1111	4						
<hr/>		<hr/>		<hr/>		<hr/>	
	17		16		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
Advanced MSCR elective	4					Elective	4
THTR 2325	4						
THTR texts and context elective	4						
THTR 1100	1						
EEAM 2000	1						
<hr/>		<hr/>		<hr/>		<hr/>	
	18		0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	
Advanced MSCR elective	4						

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	MSCR 4623	4	Vacation		Vacation	
Intermediate or advanced technique elective	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
<hr/>		<hr/>		<hr/>		<hr/>	
	16		16		0		0

Year 5	
Fall	Hours
THTR 4702	4
Elective	4
Elective	4
Elective	4
<hr/>	
	16

Total Hours: 132

Music and Communication Studies with Concentration in Music Industry, BS

The Bachelor of Science in Music with Concentration in Music Industry, the first such undergraduate program offered in Boston, is designed for students with an interest in fields such as artist management; the music products industry; the recording industry; arts administration; contracting and legal issues; financial and economics aspects of the music industry; and broadcast, mobile, and online media technologies.

The Department of Communication Studies is committed to providing students with both the communication skills and the understanding of the communication process required to thrive in a complex and changing society. Majors are required to demonstrate a mastery of the fundamentals of effective communication, to learn the fundamentals of communication theory and practice, and to develop a distinct area of emphasis. Some of the more popular areas include argumentation and advocacy, organizational and health communication, international and intercultural communication, digital communication and social media, and media production. The curriculum is designed to enhance the understanding of human communication in a variety of contexts, to empower students to become informed and engaged citizens, and to provide the knowledge and skills required to live a rich personal and professional life.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Music Industry Requirements

Code	Title	Hours
Introduction to College		
MUSC 1000	Music at Northeastern	1
Music Core		
MUSC 1001	Music in Everyday Life	4
Music Theory Placement		
All students must take a theory placement exam. Students who do not place into MUSC 1201 must first take the following:		
MUSC 1119	Fundamentals of Western Music Theory	4
Music Theory Requirement		
MUSC 1201	Music Theory 1	4
Introductory Music Industry		
MUSI 1230	Introduction to Music Industry	4
Music in Context		
Choose one course from traditional, ethnomusicology, or contemporary categories.		4
Traditional		
MUSC 2311	Historical Traditions: America	
MUSC 2312	Historical Traditions: Classical	
MUSC 3470	War and Music	
MUSC 3550	Historical Traditions: Special Topics	
Ethnomusicology		
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	
MUSC 2313	Historical Traditions: World	
MUSC 3550	Historical Traditions: Special Topics	
Contemporary		
MUSC 2101	Black Popular Music	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	
Music Industry Electives		
Complete three of the following:		12
MUSI 1204	Analyzing Popular Genres	
MUSI 2101	Demo Production for Songwriters	
MUSC 2210	Introduction to Songwriting	
MUSI 2231	Music Licensing for Media	
MUSI 2232	Music Recording 1	

MUSI 2233	Music in the Online and Mobile Environment	
MUSI 2341	Music Supervision 1	
MUSI 2540	Special Topics in Music Industry	
MUSI 3332	Artist Management	
MUSI 3333	The Record Industry	
MUSI 3334	Music Products Industry	
MUSI 3335	Copyright Law for Musicians	
MUSI 3338	Music Industry Marketing and Promotion	
MUSI 3340	Concert Promotion and Venue Management	
MUSI 3401	Hip Hop in the Music Industry	
MUSI 4530	Music Entrepreneurship	
MUSI 4601	Seminar in Music Industry	
MUST 1220	Introduction to Music Technology	
MUST 3421	Digital Audio Processing	

Business Course

ACCT 1209	Financial Accounting and Reporting	4
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Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	

COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives
 Complete three COMM courses. 12

Integrative Requirement

Code	Title	Hours
Complete one of the integrative options below. If a communication studies course is taken, an additional music industry course is required, chosen from the list of music industry electives above.		4-8

Music Option
 Complete one of the following:

MUSI 4601	Seminar in Music Industry
MUSI 4530	Music Entrepreneurship

Communication Studies Option
 Complete two of the following. One communication studies course is required:

COMM 4608	Strategic Communication Capstone
or COMM 4625	Online Communities
MUSC 2000 to MUSC 5999	
MUSI 2000 to MUSI 5999	
MUST 2000 to MUST 5999	

Communication Studies Major Grade Requirement

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000 or COMM 1000	1	ENGW 1111	4	Elective	4	Vacation	
MUSC 1001	4	MUSI 1230	4	Elective	4		
MUSC 1201	4	Communication studies foundational course	4				
COMM 1101	4	Music in context elective	4				
COMM 1112 or 2301	4						
		17		16		8 0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Communication studies elective	4	Vacation	4	Co-op	
Elective	4	Elective	4				
Music industry elective	4	Music industry elective	4				
Elective	4	Elective	4				
		EEAM 2000		1			
		16		17		0 0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGW 3314 or 3315	4	Communication studies elective	4	Co-op	
		Communicati studies elective	4	Communicati studies writing-intensive	4		
		ACCT 1209	4				
		Elective	4				
		0		16		8 0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Communication studies writing-intensive	4	Vacation	4	Co-op	
		Music industry elective	4				
		Integrative course	4				
		Elective	4				
		0		16		0 0	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Capstone	4				
		Elective	4				
		Elective	4				
		Elective	4				
		0		16			

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000 or COMM 1000	1	Communication studies foundational course	4	Elective	4	Vacation	
MUSC 1001	4	MUSI 1230	4	Elective	4		
MUSC 1201	4	ENGW 1111	4				

COMM 1101	4	Music in context elective	4				
COMM 1112 or 2301	4						
	17		16		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op		Co-op		Vacation	
Music industry elective	4						
Communication studies elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies elective	4	Co-op		Co-op		Communication studies writing-intensive	4
Communication studies elective	4					Elective	4
ACCT 1209	4						
ENGW 3314 or 3315	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op		Co-op		Vacation	
Music industry elective	4						
Elective	4						
Elective	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours				
Music industry elective	4	Capstone	4				
Integrative requirement	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				

Total Hours: 130

Political Science and Communication Studies, BA

The combined major in political science and communication studies offers students the opportunity to integrate the study of politics and government with different forms and mediums of communication. Students complete the core courses in political science along with core courses in communication studies that cover public speaking and persuasion. This combined major highlights the important role played by different forms of communication in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Methodology		
POLS 2399 or COMM 2301	Research Methods in Political Science or Communication Research Methods	4
Political Science Upper-Division Electives		
Complete two courses in the following range:		8
POLS 3300 to POLS 5999		
Political Science Electives		
Complete two courses in the following range:		8
POLS 2000 to POLS 5999		

Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 155).

- American Political Institutions (p. 155)
- Campaigns and Elections (p. 155)
- Identity, Culture, and Politics (p. 155)
- Law and Legal Studies (p. 156)
- Public Policy (p. 156)

Communication Studies Courses

Code	Title	Hours
Core Courses in Political Communication		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 1210	Persuasion and Rhetoric	4
Communication Studies Electives		
Complete six of the following:		24
COMM 1231	Principles of Organizational Communication	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	
COMM 2301	Communication Research Methods	
COMM 2303	Global and Intercultural Communication	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
COMM 3201	Health Communication	
COMM 3304	Communication and Inclusion	
COMM 3409	Advocacy Writing	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3451	Advertising Practices	
COMM 3501	Free Speech: Law and Practice	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4102	Health Communication Campaigns	
COMM 4602	Contemporary Rhetorical Theory	
COMM 4625	Online Communities	
COMM 4631	Crisis Communication and Image Management	
COMM 4992	Directed Study	
COMM 4994	Internship in Communication	

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3320 or COMM 3320	Politics and Mass Media Political Communication	4
POLS 2333		4
Capstone Requirement		

Complete one of the following. This course also counts toward the political science or communication studies elective requirement: 4

COMM 4102	Health Communication Campaigns
COMM 4530	Communication and Quality of Life
COMM 4602	Contemporary Rhetorical Theory
COMM 4625	Online Communities
POLS 4701	Political Science Senior Capstone
POLS 4703	Senior Thesis

Political Science and Communication Studies Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following: 16		
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	

POLS 2368	Music and Politics in America and Abroad
POLS 2370	Religion and Politics
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
POLS 3324	Law and Society

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Political Science and Communication Studies, BS

The combined major in political science and communication studies offers students the opportunity to integrate the study of politics and government with different forms and mediums of communication. Students complete core courses in political science along with core courses in communication studies that cover public speaking and persuasion. This combined major highlights the important role played by different forms of communication in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Methodology		
POLS 2399	Research Methods in Political Science	4
or COMM 2301	Communication Research Methods	
Political Science Upper-Division Electives		
Complete two courses in the following range:		8
POLS 3300 to POLS 5999		
Political Science Electives		
Complete two courses in the following range:		8
POLS 2000 to POLS 5999		

Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 157).

- American Political Institutions (p. 157)
- Campaigns and Elections (p. 157)
- Identity, Culture, and Politics (p. 157)
- Law and Legal Studies (p. 157)
- Public Policy (p. 157)

Communication Studies Courses

Code	Title	Hours
Core Courses in Political Communication		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 1210	Persuasion and Rhetoric	4
Communication Studies Electives		
Complete six of the following:		24
COMM 1231	Principles of Organizational Communication	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	

COMM 2301	Communication Research Methods
COMM 2303	Global and Intercultural Communication
COMM 2501	Communication Law
COMM 2551	Free Speech in Cyberspace
COMM 3201	Health Communication
COMM 3304	Communication and Inclusion
COMM 3409	Advocacy Writing
COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3451	Advertising Practices
COMM 3501	Free Speech: Law and Practice
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4102	Health Communication Campaigns
COMM 4602	Contemporary Rhetorical Theory
COMM 4625	Online Communities
COMM 4631	Crisis Communication and Image Management
COMM 4992	Directed Study
COMM 4994	Internship in Communication

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3320	Politics and Mass Media	4
or COMM 3320	Political Communication	
POLS 2333		4
Capstone Requirement		
Complete one of the following. This course also counts toward the political science or communication studies elective requirement:		4
COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	
COMM 4602	Contemporary Rhetorical Theory	
COMM 4625	Online Communities	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Political Science and Communication Studies Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirements

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	

POLS 3307	Public Policy and Administration
POLS 3310	Public Opinion, Voting, and Elections

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12

POLS 2334	Bureaucracy and Government Organizations
POLS 2335	Budgeting and Taxation
POLS 2340	Business and Government
POLS 2345	Urban Policies and Politics
POLS 2350	State and Local Politics
POLS 2357	Growth and Decline of Cities and Suburbs
POLS 2390	Science, Technology, and Public Policy
POLS 2395	Environmental Politics and Policy
POLS 3425	U.S. Foreign Policy

Cinema Studies, Minor

The interdisciplinary cinema studies minor is intended for students who wish to augment their major program of study with courses that promote the study of film, television, and digital media. In addition to film analysis and film theory, students choose from electives on culture and film, film and television history, and gender and film. The minor also includes film-related courses from art, English, history, and music.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
MSCR 2895	Film Analysis	4
CINE 3500	Film Theory	4

Elective Courses

Code	Title	Hours
Complete three of the following:		12
ARTH 2212	Survey of the Still and Moving Image	
CINE 2336	American Film and Culture	
CINE 3392	Gender and Film	
ENGL 4080	Topics in Film	
HIST 1279	History of the American Film Industry	
MUSC 1113	Film Music	

GPA Requirement

2.000 GPA required in the minor

Communication Studies, Minor

The communication studies minor is for students who seek to acquire the practical skills necessary to succeed in the modern workplace. The minor consists of two common requirements—Introduction to Communication Studies (COMM 1101) and Public Speaking (COMM 1112)—a foundational course, and three electives.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Communication Studies Minor Requirements

Code	Title	Hours
------	-------	-------

Required Courses

COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4

Foundation Course

Complete one of the following: 4

COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Communication Studies Electives

Complete three of the following: 12

COMM 1131	Sex, Relationships, and Communication	
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 2350	Producing for the Entertainment Industry	
COMM 2501	Communication Law	
COMM 2450	Sound Production for Digital Media	
COMM 1331 to COMM 2304		
COMM 2531 to COMM 4799		
COMM 4910 to COMM 4914		

The following courses may not be used to satisfy this requirement:

COMM 1511	Communication and Storytelling	
COMM 3501	Free Speech: Law and Practice	
COMM 3550	Television Field Production	
COMM 3650	Television Studio Production	
COMM 4650	Digital Editing for TV	

GPA Requirement

2.000 GPA required in the minor

Film Production, Minor

The interdisciplinary film production minor provides students with basic skills in media production. In addition to a foundational course in film production, students take electives dealing with documentary production, film analysis, screenwriting, storytelling, and video.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
MSCR 1230	Introduction to Film Production	4

Electives

Code	Title	Hours
Complete four of the following:		16
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	

ARTD 5582	Collaborative Video and Community Engagement
CINE 3389	Screenwriting
CINE 3446	Topics in Documentary Production
MSCR 2895	Film Analysis
THTR 2345	Acting for the Camera

GPA Requirement

2.000 GPA required in the minor

Human Communication, Minor

The human communication minor is for students who are interested in studying the role of interpersonal communication in relationships, including romantic relationships, friendships, and relationships in groups or in organizations. The goal for students who complete the minor is to gain an in-depth understanding of how communication can affect the quality of relationships, the satisfaction that is derived from relationships, and whether a relationship is likely to last or dissolve. Courses in the minor focus on research-validated theories, concepts, and models that will aid students in better understanding the many different types of relationships that exist in their personal and professional lives.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Foundational Course

Code	Title	Hours
Complete two of the following:		8
COMM 1131	Sex, Relationships, and Communication	
COMM 1231	Principles of Organizational Communication	
COMM 2131	Dark Side of Interpersonal Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	

Advanced Courses

Code	Title	Hours
Complete two of the following:		8
COMM 2301	Communication Research Methods	
COMM 3230	Interpersonal Communication	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 4535	Nonverbal Social Interaction	

GPA Requirement

2.000 GPA required in the minor

Media and Screen Studies, Minor

The media and screen studies minor provides students with the analytical skills necessary for the rigorous analysis of media within the humanities and social science. The minor focuses on how media shape society and prepares students for careers in arts and industry, politics, and popular culture.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Courses used in the major may not be used in the minor in media and screen studies.

Required Courses

Code	Title	Hours
MSCR 1220	Media, Culture, and Society	4
MSCR 2220	Understanding Media and Film	4

Elective Courses

Code	Title	Hours
Complete three of the following:		12
MSCR 2000 to MSCR 5999		
CINE 3500	Film Theory	
CINE 3920	Topics in Film Studies	

GPA Requirement

2.000 GPA required in the minor

Media Production, Minor

The media production minor is for students interested in learning the hands-on techniques of producing and directing for the entertainment industry. The technical aspects of camera operation, audio design, lighting design, digital editing, and live broadcast are also covered.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Restricted to communication studies majors. An overall 3.000 grade-point average (GPA) is required for the minor. Only three courses from this minor also count toward communication studies major electives; additional courses taken for this minor do not count toward communication studies major requirements.

Required Courses

Code	Title	Hours
COMM 2350	Producing for the Entertainment Industry	4
COMM 2450	Sound Production for Digital Media	4
COMM 3550	Television Field Production	4
COMM 3650	Television Studio Production	4

Elective Courses

Code	Title	Hours
Complete two of the following:		8
COMM 2650	The Business of Entertainment	
COMM 2750	Beyond Television	
COMM 3307	Production Practicum Abroad	
COMM 3450	Voice-Over Artist	
COMM 3750	Special Effects and Postproduction for Television	
COMM 4650	Digital Editing for TV	

COMM 4755	Production Capstone
COMM 4940	Special Topics in Media Production

GPA Requirement

3.000 GPA required in the minor

Oratory and Public Speaking, Minor

The oratory and public speaking minor is for students seeking to develop exemplary oral communication skills. While many universities recognize the importance of writing in their curricula, oratory and public speaking skills are often ignored.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Public Speaking

Code	Title	Hours
COMM 1112	Public Speaking	4

Elective Courses

Code	Title	Hours
Complete four of the following:		16
COMM 1113	Business and Professional Speaking	
COMM 1210	Persuasion and Rhetoric	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1511	Communication and Storytelling	
COMM 2100	Elements of Debate	
COMM 3330	Argumentation Theory	
COMM 3450	Voice-Over Artist	

GPA Requirement

2.000 GPA required in the minor

Political Communication, Minor

The political communication minor is a joint program offered through the departments of communication studies, political science, and journalism. The focus of the minor is on the electoral process, political rhetoric, and the role of media in political life. It is intended to address the interests and needs of students considering careers in the political sphere, either as candidates, employees, volunteers, or reporters in political organizations and campaigns.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Introductory Courses

Code	Title	Hours
Complete two of the following:		8
COMM 1210	Persuasion and Rhetoric	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	

JRNL 1150	Understanding Today's News
POLS 1150	American Government

Intermediate/Advanced Courses

Complete four courses from the following lists. At least one course must be taken from each department:

Code	Title	Hours
Communication Studies		
COMM 3320	Political Communication	
COMM 3409	Advocacy Writing	
COMM 3610	Communication, Politics, and Social Change	
COMM 4602	Contemporary Rhetorical Theory	
Journalism		
JRNL 2350	The History of Journalism: How the News Became the News	
JRNL 3550	The First Amendment and the Media	
Political Science		
POLS 3310	Public Opinion, Voting, and Elections	

GPA Requirement

2.000 GPA required in the minor

Professional Presentation, Minor

Whether you are speaking at a meeting, engaging an audience, pitching a new idea, or energizing your team, effective presentation skills are essential to professional success. This dynamic, interdisciplinary minor is designed to help you become a more confident, creative, and compelling communicator. Uniting the acting training of theatre with practical techniques of communications studies, develop an individualized course of study that will empower your voice and speech, cultivate your onstage persona, and develop high-impact presentation skills to enhance your career prospects.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Presentation Requirement

Code	Title	Hours
Complete two of the following:		8
COMM 1112	Public Speaking	
COMM 1113	Business and Professional Speaking	
COMM 1210	Persuasion and Rhetoric	
COMM 1511	Communication and Storytelling	

Performance Requirement

Code	Title	Hours
Complete two of the following:		8
THTR 1125	Improvisation	
THTR 1130	Introduction to Acting	
THTR 1135	Introduction to Acting Abroad	
THTR 1160	The Professional Voice	
THTR 1165	The Professional Voice Abroad	
THTR 2345	Acting for the Camera	

GPA Requirement

2.000 GPA required in minor

Rhetoric, Minor

The rhetoric minor offers students the opportunity to acquire competence in the history, theory, and criticism of civic discourse and cultural practices. It brings together courses from both the communication studies and English departments, from which students may learn about the nature and function of rhetoric in politics, the professions, and the media.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Elective

Code	Title	Hours
ENGL 1160	Introduction to Rhetoric	4
or COMM 1210	Persuasion and Rhetoric	

Electives

Code	Title	Hours
Note: For English majors, only one course from the major may also count toward this elective section of the minor.		
Complete four of the following:		16
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3501	Free Speech: Law and Practice	
COMM 4602	Contemporary Rhetorical Theory	
ENGL 3325	Rhetoric of Law	
ENGL 3381	The Practice and Theory of Teaching Writing	

GPA Requirement

2.000 GPA required in the minor

Social Activism, Minor

Students who minor in social activism will learn a variety of perspectives and practical approaches to social activism. Students interested in activism will have opportunities to explore social movements, advocacy, and citizenship in a wide array of situations. These opportunities arise from the wealth of advocacy organizations in Boston; the access Northeastern University students have to co-op experiences nationally and internationally; and Northeastern University's Service-Learning Program. Course work in a variety of departments will enable students to successfully apply different skill sets and knowledge bases to future work as lawyers, nonprofit activists, community organizers, lobbyists, and volunteers.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Introductory Courses

Code	Title	Hours
Only one course may be taken from each department/program.		
Complete two of the following:		8
Communication Studies		
COMM 1412	Social Movement Communication	
Political Science		
POLS 1150	American Government	
Sociology		
SOCL 1228	Social Problems	
SOCL 1246	Environment and Society	
Theatre		
THTR 1215	Activism and Performance	

Intermediate/Advanced Courses

Code	Title	Hours
Only one course may be taken from each department/program.		
Complete three of the following:		12
Law and Public Policy		
LPSC 2301	Introduction to Law, Policy, and Society	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
Political Science		
POLS 2395	Environmental Politics and Policy	
Sociology		
SOCL 2268	Social Movements	
SOCL 2450	Class, Power, and Social Change	

Service-Learning

Code	Title	Hours
POLS 2360	Politics of Poverty	4

GPA Requirement

2.000 GPA required in the minor

Sports, Media, and Communication, Minor

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
COMM 2110	Sports, Media, and Communication	4

Electives

Code	Title	Hours
Sports Elective		
Complete one of the following:		4
COMM 2700	Sports Promotion in the 21st Century	
JRNL 3455	Sports Writing	

Intermediate Elective

Complete one of the following:		4
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ANTH 2365	Sport, Culture, and Society
COMM 2350	Producing for the Entertainment Industry
COMM 2450	Sound Production for Digital Media
COMM 3451	Advertising Practices
COMM 3550	Television Field Production
COMM 3650	Television Studio Production
ECON 3481	Economics of Sports
Advanced Elective	
Complete one of the following: 4	
COMM 4631	Crisis Communication and Image Management
COMM 4994	Internship in Communication
JRNL 3945	Internship
JRNL 4650	Ethics and Issues in Journalism
JRNL 5310	Photojournalism
JRNL 5314	Video News Reporting and Producing

GPA Requirement

2.000 GPA required in minor

School of Journalism

Website (<http://camd.northeastern.edu/journalism>)

Jonathan Kaufman, MA
Professor and Director

102 Lake Hall
617.373.3236
617.373.8773 (fax)
Susan Conover, Academic Coordinator, s.conover@northeastern.edu

The School of Journalism seeks to prepare students for careers in news and related communication fields. The program prepares future journalists and professional communicators in writing, editing, digital and social media, photography, video and audio production, design, and public relations. These skills have broad applications. Graduates of the program also go on to work in government, business, law, and teaching.

Students may enroll in a four- or five-year cooperative education program or a four-year program without co-op. The school strongly advises students to obtain cooperative education experience. The program offers some of the best co-ops and internships anywhere.

Graduates work for some of the world's best newspapers and magazines, radio and television stations, online publications, wire services, public relations departments, and advertising agencies.

Academic Progression Standards

Journalism majors and minors must be in good standing in accordance with university-wide requirements to remain in the major or minor.

Preapproved Template Program in Journalism

The School of Journalism offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<https://registrar.northeastern.edu/article/combined-majors>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/>

[registrar/form-maj-comb.pdf](#)), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the myNortheastern web portal (<http://my.northeastern.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

Programs

Bachelor of Arts (BA)

- Journalism (p. 162)
- Journalism and English (p. 164)
- Journalism and Political Science (p. 166)
- Media and Screen Studies and Journalism (p. 139)

Bachelor of Science (BS)

- Computer Science and Journalism (p. 170)
- Information Science and Journalism (p. 173)
- Journalism and Interaction Design (p. 96)

Minors

- Journalism Practice (p. 177)
- Journalism Studies (p. 177)
- Photojournalism (p. 109)

Journalism, BA

Website (<https://camd.northeastern.edu/journalism/academic-programs/ba-journalism>)

If you're a news junkie; love to write; want to tell people what's going on in your hometown, around the world, or in an organization, a journalism major at Northeastern University is designed to give you the skills and experience you need to tell your story.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), Difference and Diversity (DD), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Journalism Major Requirements

Students transferring from outside institutions must complete a minimum of five 4-credit journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Issues in Journalism	

Code	Title	Hours
Introduction to College		
JRNL 1000	Journalism at Northeastern	1

Journalism Courses

A grade of C or higher is required:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

Required Journalism

JRNL 1150	Understanding Today's News	4
JRNL 2350	The History of Journalism: How the News Became the News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Issues in Journalism	4

Journalism Electives

Complete three journalism electives. 12

Journalism-Related Requirement

HIST 1130	Introduction to the History of the United States	4
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Journalism Major Credit Requirement

Complete 49 semester hours in the major.

Upper-Division Electives

Complete three general electives numbered 3000 or above that do not double-count with the major or NUpath.

Program Requirement

129 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
JRNL 1000	1	JRNL 1101 and JRNL 1102	5	Vacation	0	Vacation	0
JRNL 1150	4	Foreign language core course	4				
ENGW 1111	4	Elective	4				
HIST 1130	4	Elective	4				

Elective	4						
	17	17	0	0			
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
JRNL 2201	4	JRNL 2301	4	Vacation	0	Co-op	0
Foreign language core course	4	JRNL 2350	4				
Elective	4	Foreign language core course	4				
Elective	4	Elective	4				
		EEAM 2000	1				

	16	17	0	0			
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
Co-op	0	JRNL 3550	4	Elective	4	Co-op	0
		JRNL 3610	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
Co-op	0	Journalism elective 1	4	Upper-division elective	4	Co-op	0
		Journalism elective 2	4	Elective	4		
		Elective	4				
		Upper-division elective	4				
	0		16		8		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
Co-op	0	JRNL 4650	4				
		Journalism elective 3	4				
		Upper-division elective	4				
		Elective	4				
	0		16				

Total Hours: 131

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	
JRNL 1000	1	JRNL 1101 and JRNL 1102	5	Vacation	0	Vacation	0
JRNL 1150	4	Foreign language core course	4				
ENGW 1111	4	Elective	4				
HIST 1130	4	Elective	4				

Elective	4						
	17		17			0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op	0	Co-op	0	Elective	4
Foreign language core course	4					Elective	4
Elective	4						
Elective	4						
EEAM 2000	1						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op	0	Co-op	0	Elective	4
JRNL 2350	4					Elective	4
Foreign language core course	4						
Elective	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3550	4	Co-op	0	Co-op	0	Vacation	0
JRNL 3610	4						
Upper-division elective	4						
Elective	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours				
Journalism elective 1	4	JRNL 4650	4				
Journalism elective 2	4	Journalism elective 3	4				
Elective	4	Upper-division elective	4				
Upper-division elective	4	Elective	4				
	16		16				

Total Hours: 131

Journalism and English, BA

The School of Journalism and the English Department offer an interdisciplinary combined major in Journalism and English. Broadly speaking, students in the Combined Major in Journalism and English at Northeastern integrate the study of journalism with the study of language, literature and writing.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Creative Expression/Innovation (EI), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

NUpath requirements Interpreting Culture (IC), Analyzing and Using Data (AD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Journalism Major Requirements

Code	Title	Hours
Journalism Introductory Course		
JRNL 1150	Understanding Today's News	4
Journalism Foundations		
Must receive a C or better in the following:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4
Law and Ethics		
JRNL 3550 or JRNL 4650	The First Amendment and the Media Ethics and Issues in Journalism	4
Journalism Electives		
Take three JRNL courses		12

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4

or ENGL 1410 Introduction to Writing Studies

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric

ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing

ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	

Capstone		
ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives		
Complete two additional ENGL electives.		8

Integrative Requirement

Code	Title	Hours
JRNL 3630	Magazine Writing	4
ENGL 2740	Writing and Community Engagement	4
or ENGL 2850	Writing for Social Media: Theory and Practice	

Program Requirement

129 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ENGL 1000	1	JRNL 1101 and JRNL 1102	5	Elective	4	Vacation	0
JRNL 1150	4	ENGL 1160 or 1410	4	Elective	4		
ENGW 1111	4	English diversity requirement	4				
ENGL 1400	4	Pre- nineteenth- century literature requirement	4				
Elective	4						
		17	17		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op	0	Co-op	0	Elective	4
EEAM 2000 or EESH 2000	1				Elective		4

Nineteenth- century, twentieth-, and twenty- first-century literature requirement	4						
Theories and methods requirement	4						
Elective	4						
		17	0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op	0	Co-op	0	Vacation	0
Journalism elective 1	4						
Comparative literature requirement	4						
English writing requirement	4						
		16	0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3610	4	Co-op	0	Co-op	0	Vacation	0
Journalism elective 2	4						
English elective 1	4						
ENGL 2740 or 2850	4						
		16	0		0		0

Year 5			
Fall	Hours	Spring	Hours
JRNL 3550 or 4650	4	Journalism elective 3	4
JRNL 3630	4	ENGL 4710 or 4720	4
English elective 2	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 131

Journalism and Political Science, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (CI), Interpreting Culture (IC), Understanding Societies and Institutions (SI), Analyzing and Using Data (AD), Engaging Difference and Diversity (DD), and Employing Ethical Reasoning (ER) are met through the major requirements. All other Nupath requirements must be met through electives.

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Journalism Major Requirements

Code	Title	Hours
Journalism Introductory Course		
JRNL 1150	Understanding Today's News	4
Journalism Foundations		
Must receive a C or better in the following:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4
Ethics		
JRNL 4650	Ethics and Issues in Journalism	4
Journalism Electives		
Take three JRNL courses.		12

Political Science Requirements

Code	Title	Hours
Political Science Foundation Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Thought		
POLS 2325	Ancient Philosophy and Political Thought	4
POLS 2328	Modern Political Thought	4
POLS 2330	American Political Thought	4
POLS 2332	Contemporary Political Thought	4
Political Science Capstone or Thesis		
Complete one of the following:		4
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Political Science Electives

Complete two upper-division POLS courses or complete a concentration from the following list:	8
POLS 2300 to POLS 5999	

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 167).

- American political institutions (p. 167)
- Campaigns and elections (p. 167)
- Comparative politics (p. 168)
- Identity, culture, and politics (p. 168)
- International relations and diplomacy (p. 168)
- Law and legal studies (p. 168)
- Public policy (p. 168)
- Security studies (p. 168)

Integrative Requirement

Code	Title	Hours
JRNL 3550	The First Amendment and the Media	4
COMM 3320 or POLS 3320	Political Communication or Politics and Mass Media	4

Journalism and Political Science Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		

POLS 3310	Public Opinion, Voting, and Elections
POLS 3162	Local Campaigns and Elections
POLS 3320	Politics and Mass Media
POLS 3402	
POLS 3304	

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	

POLS 4938	Dialogue of Civilizations: International Politics Abroad
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Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Media and Screen Studies and Journalism, BA

A Bachelor of Arts in Journalism and Media and Screen Studies is designed for the student who is interested in pursuing a career as a journalist specializing in the film industry.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), Difference and Diversity (DD), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
or JRNL 1000	Journalism at Northeastern	
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	

MSCR 2895	Film Analysis
MSCR 3210	Special Topics in Media and Screen Studies
MSCR 3420	Digital Media Culture
MSCR 3422	Media Audiences
MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity
ARTD 3480	Video: Sound and Image
ARTD 3485	Experimental Video
ARTH 2212	Survey of the Still and Moving Image
Advanced Media and Screen Electives	
Complete two of the following:	
CINE 3500	Film Theory
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Journalism Requirements

Code	Title	Hours
Journalism Foundations		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox (A grade of C or higher is required)	5
JRNL 1150	Understanding Today's News	4
JRNL 2201	Journalism 2: Intermediate Reporting (A grade of C or higher is required)	4
Journalism and Advanced Writing		
JRNL 2301	Visual Storytelling in Journalism (A grade of C or higher is required)	4
Television News		
JRNL 5314	Video News Reporting and Producing	4
Ethics and Issues		
JRNL 4650	Ethics and Issues in Journalism	4
Journalism Elective		
Complete three courses in the following range:		12
JRNL 2000–JRNL 5999		

Integrative Requirement

The following course also counts toward the media and screen studies requirements above.

Code	Title	Hours
Integrative Course		
MSCR 4623	Theories of Media and Culture	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study**Sample Five Years, Three Co-ops in Spring/Summer 1****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000 or JRNL 1000	1	JRNL 1101 and JRNL 1102	5	Foreign language core course	4	Vacation	
MSCR 1220	4	MSCR 2220	4	Elective	4		
JRNL 1150	4	Elective	4				
ENGW 1111	4	Foreign language core course	4				
MATH 1215	4						
	17		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op		Co-op		Elective	4
EEAM 2000	1					Elective	4
MSCR elective	4						
MSCR elective	4						
Foreign language core course	4						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op		Co-op		Vacation	
JRNL 5307	4						
MSCR elective	4						
Elective	4						
	16		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 5314	4	Co-op		Co-op		Vacation	
JRNL elective	4						
MSCR advanced elective	4						
MSCR elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
JRNL 4650	4	MSCR 4623	4
JRNL 5309	4	Elective	4
MSCR advanced elective	4	Elective	4

Elective	4	Elective	4
	16		16

Total Hours: 131

Sample Four Years, No Co-ops**Year 1**

Fall	Hours	Spring	Hours
MSCR 1000 or JRNL 1000	1	JRNL 1101 and JRNL 1102	5
JRNL 1150	4	MSCR 2220	4
MSCR 1220	4	Elective	4
ENGW 1111	4	Foreign language core course	4
MATH 1215	4		
	17		17

Year 2

Fall	Hours	Spring	Hours
JRNL 2201	4	JRNL 2301	4
MSCR elective	4	JRNL 5307	4
MSCR elective	4	MSCR elective	4
Foreign language core course	4	Foreign language core course	4
	16		16

Year 3

Fall	Hours	Spring	Hours
JRNL 5314	4	JRNL 4650	4
MSCR elective	4	JRNL 5309	4
Elective	4	MSCR advanced elective	4
Elective	4	Elective	4
	16		16

Year 4

Fall	Hours	Spring	Hours
JRNL elective	4	MSCR 4623	4
MSCR advanced elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Computer Science and Journalism, BS

The computer science and journalism combined major supports students who understand that journalism now takes place in both print and the digital world. Students will learn the principles, practices, and responsibilities of the journalism profession while gaining a deep understanding of the systems and technologies that support digital media.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

At least one of these must be from the following list:

IS 4200 Information Retrieval

IS 4300 Human Computer Interaction

Journalism Major Requirements

Students transferring from outside institutions must complete a minimum of five 4-credit journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Issues in Journalism	

Code	Title	Hours
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Journalism Courses

A grade of C or higher is required:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

Required Journalism

JRNL 1150	Understanding Today's News	4
JRNL 2350	The History of Journalism: How the News Became the News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Issues in Journalism	4

Journalism Electives

Complete two JRNL courses. 8

Journalism-Related Requirement

HIST 1130	Introduction to the History of the United States	4
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Supporting Courses

Code	Title	Hours
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Mathematics Requirement

MATH 1341	Calculus 1 for Science and Engineering	4
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418 Wired/Unwired: Cybercultures and Technopolitics

IA 5240 Cyberlaw: Privacy, Ethics, and Digital Rights

INSH 2102 Bostonography: The City through Data, Texts, Maps, and Networks

PHIL 1145 Technology and Human Values

SOCL 1280 The 21st-Century Workplace

SOCL 4528 Computers and Society

SOCL 3485 Environment, Technology, and Society

Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

JRNL 2301	Visual Storytelling in Journalism	4
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Required General Electives

Code	Title	Hours
Complete seven general electives.		28

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Interpreting Culture

- Engaging Difference and Diversity
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and JRNL courses

Program Requirement

134 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5				
JRNL 1150	4	HIST 1130	4				
ENGW 1111	4						
	19		18		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Vacation	0
CS 3500	4						
JRNL 2201	4						
MATH 1341	4						
Elective	4						
	17		0		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op	0	Co-op	0	Elective	4
CS 3000	4					Elective	4
Computer science elective	4						
Elective	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2350	4	Co-op	0	Co-op	0	Elective	4
JRNL 3610	4					Elective	4
Computer science elective	4						

Elective	4						
	16		0		0		8
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3550	4	CS 4000	1				
Journalism elective	4	CS 4500 and CS 4501	4				
Computer science elective	4	JRNL 4650	4				
Computer science elective	4	Journalism elective	4				
		Computing and social issues	4				
	16		17				

Total Hours: 135

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	JRNL 1101 and JRNL 1102	5	MATH 1341	4		
CS 2500 and CS 2501	5	CS 3200	4				
JRNL 1150	4	HIST 1130	4				
ENGW 1111	4						
	19		18		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Elective	4
JRNL 2201	4					Elective	4
CS 3000	4						
Computer science elective	4						
Elective	4						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Computer science elective	4	Co-op	0	Co-op	0	Elective	4
Computer science elective	4					Elective	4
JRNL 2301	4						
JRNL 2350	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4500 and CS 4501	4	JRNL 4650	4	Elective	4		
JRNL 3610	4	Computing and social issues	4	Elective	4		
JRNL 3550	4	Journalism elective	4				
CS elective	4	Journalism elective	4				
	16		16		8		0

Total Hours: 135

Information Science and Journalism, BS

The information science and journalism combined major is similar to the computer science and journalism degree, with a greater focus on the journalism profession's information science needs. Information science combines concepts and skills from computer science, behavioral and social science, and system design into an integrated, people-centered curriculum. Both degrees provide a strong foundation in the principles, practices, and responsibilities of journalism as well as the systems and technologies that support digital media.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Information Science Required Courses

IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project	5
Information Science Elective (Integrative)		
Complete one of the following:		
IS 4200	Information Retrieval	4
IS 4300	Human Computer Interaction	

Journalism Major Requirements

Students transferring from outside institutions must complete a minimum of five 4-credit journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Issues in Journalism	

Code	Title	Hours
Journalism Courses		

A grade of C or higher is required:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

Required Journalism

JRNL 1150	Understanding Today's News	4
JRNL 2350	The History of Journalism: How the News Became the News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Issues in Journalism	4

Journalism Electives

Complete two JRNL courses. 8

Journalism-Related Requirement

HIST 1130	Introduction to the History of the United States	4
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Supporting Courses

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Calculus		
MATH 1341	Calculus 1 for Science and Engineering	4
Psychology		
PSYC 1101	Foundations of Psychology	4
Computing and Social Issues		
Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks
PHIL 1145	Technology and Human Values
SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
JRNL 2301	Visual Storytelling in Journalism	4

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Interpreting Culture
- Engaging Difference and Diversity
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone
Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and JRNL courses

Program Requirement

134 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Summer 2/Fall

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4		
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5		
JRNL 1150	4	HIST 1130	4		
ENGW 1111	4				
19		18		0	

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
CS 3500	4	CS 1210	1	Vacation	0
IS 2000 (*)	4	IS 3500 (*)	4		
JRNL 2201	4	Elective	4		
PSYC 1101	4	JRNL 2301	4		
		CS 3000	4		
16		17		0	

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	JRNL 3610	4	Elective	4
		JRNL 2350	4	Elective	4
		MATH 1341	4		
		ECON 2350	4		
0		16		8	

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	JRNL 3550	4	Elective	4
		IS 4800 (*)	4	Elective	4
		Journalism elective	4		
		Information science elective	4		
0		16		8	

Year 5					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	IS 4900 (*)	5		
		JRNL 4650	4		
		Journalism elective	4		
		Computing and social issues	4		
0		17			

Total Hours: 135

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Summer 2/Fall

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341	4
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5		
JRNL 1150	4	ECON 2350	4		
ENGW 1111	4				
19		18		8	

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
IS 2000 (*)	4	CS 1210	1	HIST 1130	4
				Co-op	0

Elective	4	IS 3500 (*)	4	Elective	4
JRNL 2201	4	CS 3000	4		
PSYC 1101	4	JRNL 2350	4		
		JRNL 2301	4		

16 17 8 0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Journalism elective	4	Co-op	0

		Information science elective	4	Elective	4		
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		JRNL 3610	4				
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		Journalism elective	4				
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Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	IS 4900	5	Elective	4

		JRNL 4650	4	Elective	4
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		JRNL 3550	4		
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		Computing and social issues	4		
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0 17 8

Total Hours: 135

*Indicates course must be taken in the term listed.

Journalism and Interaction Design, BS

The School of Journalism and the Department of Art and Design offer an interdisciplinary combined major in journalism and interaction design. Broadly speaking, students in the combined major in journalism and interaction design at Northeastern integrate the study of journalism with the study of art and design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), Difference and Diversity (DD), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirement Analyzing and Using Data (AD) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Introduction to College

Code	Title	Hours
JRNL 1000	Journalism at Northeastern	1
or ARTF 1000	Art and Design at Northeastern	

Journalism Major Requirements

Code	Title	Hours
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Journalism Introductory Course

JRNL 1150	Understanding Today's News	4
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Journalism Foundations

Must receive a C or better in the following:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
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JRNL 2201	Journalism 2: Intermediate Reporting	4
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JRNL 2301	Visual Storytelling in Journalism	4
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JRNL 3610	Digital Storytelling and Social Media	4
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Law and Ethics

JRNL 3550 or JRNL 4650	The First Amendment and the Media Ethics and Issues in Journalism	4
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Journalism Electives

Take three JRNL courses		12
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Art and Design Core

Code	Title	Hours
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Art and Design Fundamentals

ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
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ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
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Art and Design History

Complete two of the following: 8

ARTH 1111	Global Art and Design History: Renaissance to Modern	
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ARTH 2210	Modern Art and Design History	
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ARTH 2215	History of Graphic Design	
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Design Requirements

Code	Title	Hours
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Design Courses

ARTG 1250	Design Process Context and Systems	4
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ARTG 2250	Typography 1 (with optional ARTG 2251)	4
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ARTG 2260	Programming Basics	4
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ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
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ARTG 3350	Typography 2	4
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ARTG 3451	Information Design 1	4
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ARTG 3700	Interaction Design 2: Mobile	4
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Degree Project

Complete one of the following:		8
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ARTG 4550	Design Degree Project 1
ARTG 4700	Interaction Team Degree Project 1

Design Elective

Code	Title	Hours
Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirements

Code	Title	Hours
JRNL 5311	Design and Graphics	4
Complete one of the following:		4
ARTG 4551	Design Degree Project 2	
or ARTG 4701	Interaction Team Degree Project 2	

Program Requirement

131 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ARTF 1000	1	JRNL 1101 and JRNL 1102	5	Elective	4	Vacation	
JRNL 1150	4	ARTF 2223 (with optional ARTF 2224)	4	Elective	4		
ENGW 1111	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTG 1250	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						
		17	17	8	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op 1	4	Co-op 1	4	Vacation	

EEAM 2000	1				
Art + design history elective 1	4				
ARTG 2260	4				
Elective	4				
		17	0	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op 2	4	Co-op 2	4	Elective	4
Journalism elective 1	4					ENGW 3302	4
ARTG 2400 (with optional ARTG 2401)	4						
ARTG 3350	4						
		16	0	0	8		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3610	4	Co-op 3	4	Co-op 3	4	Vacation	0
Journalism elective 2	4						
Art + design history elective 2	4						
ARTG 3700	4						
		16	0	0	0		

Year 5

Fall	Hours	Spring	Hours
JRNL 5311	4	Journalism elective 3	4
JRNL 3550 or 4650	4	ARTG 4551 or 4701	4
ARTG 3451	4	Art + design elective	4
ARTG 4550 or 4700	4	Elective	4
		16	16

Total Hours: 131

Sample Five Years, Three Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ARTF 1000	1	JRNL 1101 and JRNL 1102	5	Vacation	4	Vacation	
JRNL 1150	4	ARTF 2223 (with optional ARTF 2224)	4				
ENGW 1111	4	ARTG 2250 (with optional ARTG 2251)	4				
ARTG 1250	4	Elective	4				

ARTF 1122 (with optional ARTF 1123)	4					
	17	17	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	JRNL 2301	4	Vacation		Vacation	
EEAM 2000	1	Journalism elective 1		4			
Art + design history elective 1	4	ARTG 2400 (with optional ARTG 2401)		4			
ARTG 2260	4	ARTG 3350		4			
Elective	4						
	17		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours
JRNL 3610	4	Co-op 1		Co-op 1	
Journalism elective 2	4				
Art + design elective	4				
ARTG 3700	4				
	16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
JRNL 3550 or 4650	4	Co-op 2		Co-op 2	
Art + design history elective 2	4				
Elective	4				
ENGW 3302	4				
	16		0		0

Year 5

Fall	Hours	Spring	Hours
JRNL 5311	4	Journalism elective 3	4
ARTG 3451	4	ARTG 4551 or 4701	4
ARTG 4550 or 4700	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 131

Journalism Practice, Minor

With the explosion of websites, podcasts, and social media, more and more people find themselves using the skills of a journalist in the dissemination of information in both their private and professional lives. This minor is intended for those students who wish to bring more professionalism and sophistication to the things they post online or who hope to offer a skill set that will make them more versatile and employable in their chosen field. It will also serve those who may be

considering a career in journalism but find themselves too late in their college careers to switch majors.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Any student wishing to satisfy a minor in both journalism studies and journalism practice must take eight unique courses. No double counting. Journalism majors are not eligible for a minor in journalism practice.

Required Courses

Code	Title	Hours
Required Courses		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
Restricted Elective		
Complete one course from the following:		
JRNL 3610	Digital Storytelling and Social Media	4
JRNL 3625	Public Relations Practice	
JRNL 3630	Magazine Writing	
JRNL 3680	Advanced Reporting	
JRNL 5310	Photojournalism	
JRNL 5311	Design and Graphics	
JRNL 5314	Video News Reporting and Producing	
JRNL 5360	Global Reporting	

Elective

Complete one additional JRNL course. 4

GPA Requirement

2.000 GPA required in the minor

Journalism Studies, Minor

With an ever-growing array of information options available, and with the news media making news in the early days of the new administration in Washington, interest in the workings of journalism has never been higher. This minor is intended for those students who wish for a sophisticated media literacy, an understanding of the field that goes deeper than what can be gained in our popular Understanding Today's News course.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Any student wishing to satisfy a minor in both journalism studies and journalism practice must take eight unique courses. No double counting. Journalism majors are not eligible for a minor in journalism studies.

Required Courses

Code	Title	Hours
Foundation		
JRNL 1150	Understanding Today's News	4

JRNL 2350	The History of Journalism: How the News Became the News	4
Law		
JRNL 3550	The First Amendment and the Media	4
Elective		
Take one JRNL course.		4

GPA Requirement

2.000 GPA required in the minor

Photojournalism, Minor

As our society continues to move toward a world of technology, the power of photos become that much more important. This minor will engage students on how to visually tell a compelling story. It will give students the skill sets needed to succeed in that endeavor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Photography Foundation		
Complete one of the following:		4
ARTE 2500	Art and Design Abroad: Studio	
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2350	Photo Basics for Nonmajors	
Photography Requirement		
ARTD 3460	Photography 1	4
Integrative		
JRNL 5310	Photojournalism	4
Electives		
Complete one of the following:		4
JRNL 2301	Visual Storytelling in Journalism	
JRNL 5314	Video News Reporting and Producing	

GPA Requirement

2.000 GPA required in the minor

Music

Website (<http://camd.northeastern.edu/music>)

Daniel Strong Godfrey, PhD
Professor and Chair

351 Ryder Hall
617.373.2440
617.373.4129 (fax)

Allen G. Feinstein, Senior Teaching Professor and Head Faculty Mentor,
a.feinstein@northeastern.edu

The Department of Music offers its music majors, music minors, and combined majors a cross-disciplinary approach to the study and practice of music, underscored by real-world experiential learning and cutting-edge technology. The music faculty are dedicated to three continuously interacting and integrated dimensions: the creation of music; its

production and promotion; and the study of its history, meaning, and impact on cultures around the globe—past, present, and future.

There are three concentrations in music: the Bachelor of Arts in Music, the Bachelor of Science in Music with Concentration in Music Technology, and the Bachelor of Science in Music with Concentration in Music Industry. Students in all three concentrations begin with a core of shared offerings, including a uniquely probing, cross-cultural, and interdisciplinary introduction to music, Music in Everyday Life (MUSC 1001), together with shared requirements in introductory theory and musicianship. With a common perspective offered by these courses, students then branch out to focus on their individual disciplines but also to interact and bring unique aspects of their disciplines together in a collaborative learning environment with other students.

Our signature program is the Bachelor of Arts in Music, designed to offer a variety of flexible advising paths that allow a focus on history, theory, ethnomusicology, performance, or other directions tailored to the students' individual interests.

The Bachelor of Science in Music with Concentration in Music Technology focuses on the creative application of digital sound technologies to a broad range of artistic, social, and industrial purposes, including experimental composition, film, video, theatre, game design, mobile applications, sound design for urban environments, and beyond. An emphasis is maintained throughout on imaginative exploration, collaboration across disciplines, and real-world experience.

The Bachelor of Science in Music with Concentration in Music Industry, the first such undergraduate program offered in Boston, is designed for students with an interest in fields such as artist management; the music products industry; the recording industry; arts administration; contracting and legal issues; financial and economics aspects of the music industry; and broadcast, mobile, and online media technologies.

Through an exchange program with the New England Conservatory (NEC), the Department of Music also offers a joint certificate in performance, where students may attend classes and take performance instruction at NEC in combination with offerings from the Northeastern University music catalog (see below).

While some music courses are designed for music majors, music minors and combined majors in music, and a variety of other disciplines, the Department of Music also offers elective survey courses and other study opportunities open to students across the Northeastern University campus. Also available are private lessons in a wide variety of instruments and voice, including a focus on genres ranging from traditional concert music to jazz to fusion, rock, and a variety of popular idioms.

An extensive concert series presents not only guest performers and ensembles from around the world but also performances by the Northeastern University Symphony Orchestra; the Northeastern University Wind Ensemble and Concert Band; the Northeastern University Choral Society; and the Jazz Ensemble, Jazz Choir, Contemporary Music Ensemble, Blues/Rock Fusion Ensemble, Rock Ensemble, Chamber Music Ensembles, and individual student recitals, along with an array of student-run music groups.

In addition to co-op, Dialogues of Civilization, and a range of other opportunities for experiential learning and study abroad, students may immediately begin to participate in student organizations, such as Green Line Records and other groups, that allow students actively to pursue their passions and aspirations.

Students may double concentrate in music industry and music technology. While students are encouraged to consider double majoring in the Bachelor of Arts in Music and other disciplines outside music, the BA cannot be combined with the concentration in music industry or the concentration in music technology.

Students may double count only one course between a concentration and a minor. Students may double count only one course between two different music minors. Should a student place out of a course in a minor, it must be replaced with another course.

Academic Progression Standards

Students must maintain at least a B– average in all major courses and complete all required music courses with grades of at least C. Students who fail to meet the above standards will be placed on departmental probation; those who remain on probation for two consecutive semesters will be dropped from the major.

Preapproved Template Programs in Music and in Music Industry

The Department of Music offers preapproved template programs in the following areas:

- Music
- Music industry
- Music technology

Each template program may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<http://www.northeastern.edu/registrar/major-2.html>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see “Student-Requested Combined Major (p. 33).” For template program requirements, visit the myNortheastern web portal (<http://my.northeastern.edu>), click on the “Self-Service” tab, then on “My Degree Audit.”

NEC/NU Joint Certificate Programs in Music Performance

The Department of Music at Northeastern University (NU) and the New England Conservatory (NEC), administered through its School of Continuing Education, offer a Professional Studies Certificate in Music Performance. This program primarily serves undergraduate music majors who audition competitively and are dedicated to advancing their skills on an instrument or voice in the classical or jazz styles.

The certificate in music performance is *in addition to* the student’s NU undergraduate degree—it is an entirely separate and distinct credential. Credits are taken partly at Northeastern University and partly at the New England Conservatory and/or its continuing education division. Those courses taken directly from the New England Conservatory catalog require permission of NEC faculty but are part of a tuition exchange program shared between Northeastern University and the New England Conservatory; they do not carry additional tuition costs. Some courses may be taken through NEC’s School of Continuing Education, which is not part of the tuition exchange program; those courses are billed separately over and above tuition at Northeastern University and are not eligible for financial aid. Individual lessons with faculty at the New England Conservatory carry a lab fee each semester, which is billed separately from tuition.

Students should be aware that ensembles at NEC meet primarily during the morning and that academic courses offered at NEC meet primarily in the afternoons.

Programs

Bachelor of Arts (BA)

- Music (p. 179)

Bachelor of Science (BS)

- Music with Concentration in Music Technology (p. 185)
- Music with Concentration in Music Industry (p. 182)
- Computer Science and Music with Concentration in Music Technology (p. 188)
- Electrical Engineering and Music with concentration in Music Technology (p. 414)
- Game Design and Music with Concentration in Music Technology (p. 94)
- Music and Communication Studies with Concentration in Music Industry (p. 151)
- Physics and Music with Concentration in Music Technology (p. 194)

Minor

- Music (p. 196)
- Ethnomusicology (p. 196)
- Music Composition (p. 197)
- Music Industry (p. 197)
- Music Performance (p. 197)
- Music Recording (p. 198)
- Music Technology (p. 198)
- Musical Theatre (p. 199) (offered by the Department of Theatre)
- Songwriting (p. 199)

Certificate

- NEC/NU Joint Certificate Program—Professional Studies Certificate in Music Performance (p. 199)

Music, BA

The Bachelor of Arts in Music at Northeastern engages students in the study of how music works and the many contexts in which it is created and received.

Students encounter a wide range of musical repertoires, theoretical approaches, and research strategies. While many students opt to major in music alone, many others enroll as part of a double major. This is especially true of young scholars who are aiming for careers in engineering, sciences, business, and fields in the humanities and social sciences who still want to pursue their interests in music. Students in the BA concentration take a variety of classes in history, theory, and ethnomusicology, and they may be active performers, participating in our many ensembles and taking private lessons. Students also participate in a wide array of co-ops and are encouraged to explore opportunities that conform to their interests.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

- NUpath requirements Creative Expression/Innovation (EI) and Interpreting Culture (IC) are met through the major course requirements.
- NUpath requirements Formal and Quantitative Reasoning (FQ), Societies and Institutions (SI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.
- NUpath requirements Natural and Designed World (ND) must be met through general electives.

Introduction to College

Code	Title	Hours
MUSC 1000	Music at Northeastern	1

Music Theory and Musicianship

Code	Title	Hours
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Music Theory Placement

All students must take a music theory placement exam. Students who do not place into MUSC 1201 must first take the following course:

MUSC 1119	Fundamentals of Western Music Theory
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Required Music Theory

A grade of C or higher is required in each course:

MUSC 1201	Music Theory 1	4
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Choose two courses from the following list: 8

MUSC 1119	Fundamentals of Western Music Theory
MUSC 1202	Music Theory 2
MUSC 2111	Algebra and Geometry of Music
MUSC 2208	Jazz Improvisation
MUSC 2303	Tonal Form
MUSC 2350	Acoustics and Psychoacoustics of Music
MUSC 3541	Music Analysis Seminar
MUSI 1204	Analyzing Popular Genres

Music in Context

Choose one from each category below. From the categories "Traditional," "Ethnomusicology," and "Contemporary," at least two must be at the 2000-level or higher. Courses may not double-count across the five areas.

Code	Title	Hours
Introductory Class		
MUSC 1001	Music in Everyday Life	4

Traditional

Complete one of the following:		4
MUSC 1106	Women in Music	
MUSC 1109	Introduction to Art, Drama, and Music	
MUSC 1136	What's Playing at Symphony?	
MUSC 2311	Historical Traditions: America	
MUSC 2312	Historical Traditions: Classical	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2340	Divas, DJs, and Double Standards	
MUSC 3470	War and Music	
MUSC 3550	Historical Traditions: Special Topics	

Ethnomusicology

Complete one of the following:		4
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	
MUSC 2313	Historical Traditions: World	
MUSC 2330	Musical Communities of Boston	
MUSC 3550	Historical Traditions: Special Topics	
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology	
MUSI 3401	Hip Hop in the Music Industry	

Contemporary

Complete one of the following:		4
MUSC 1106	Women in Music	
MUSC 1110	Music in Popular Culture	
MUSC 1112	Jazz	
MUSC 1113	Film Music	
MUSC 1141	Wired for Sound	
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2340	Divas, DJs, and Double Standards	
MUSC 2351	Music, Sound, and the Screen	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	

Creative

Complete one of the following 4-semester-hour courses or choose four 1-semester-hour ensembles from the list below:		4
MUST 1220	Introduction to Music Technology	
MUST 1301	Introduction to Composition	
MUSC 2208	Jazz Improvisation	
MUSC 2209	Conducting	
MUSC 2210	Introduction to Songwriting	
MUSC 2150	Making a Musical: Analysis, Craft, and Creation	

Ensembles

MUSC 1904	Chorus
MUSC 1905	Concert Band
MUSC 1906	Orchestra
MUSC 1907	Wind Ensemble
MUSC 1911	Jazz Ensemble

MUSC 1912	Rock Ensemble
MUSC 1913	Blues/Rock Ensemble
MUSC 1914	Create Your Own Music
MUSC 1915	Chamber Ensemble
MUSC 1916	Contemporary Music Ensemble
MUSC 1917	Jazz Choir and Combo
MUSC 1918	World Music Ensemble
MUSC 1919	Fusion Ensemble
MUSC 1920	Pep Band

Capstone

Code	Title	Hours
Complete one of the following: 4		
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology	
MUSI 4601	Seminar in Music Industry	
MUST 4611	Music Technology Capstone/Senior Recital	

Music Electives

Code	Title	Hours
Complete three additional courses in music (MUSC, MUSI, or MUST). At least two must be at the 2000-level or higher.		12

Major Credit Requirement

Complete 49 semester hours in the major.

Major GPA Requirement

Minimum 2.667 GPA required in the major

Program Requirement

128 total semester hours required

Plan of Study

Sample Four Years, No Co-op

Year 1			
Fall	Hours	Spring	Hours
MUSC 1001	4	Music theory course	4
MUSC 1201	4	Music in context course	4
ENGW 1111	4	Music elective	4
MUSC 1000	1	Elective	4
Elective	4		
		17	16
Year 2			
Fall	Hours	Spring	Hours
Music in context course	4	Music in context course	4
Music elective	4	Music elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Year 3

Fall	Hours	Spring	Hours
Music in context course	4	Elective	4
Music theory course	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Year 4

Fall	Hours	Spring	Hours
Elective	4	Capstone course	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 129

Sample Five Years, Two Co-ops

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MUSC 1001	4	Music theory course	4	Vacation		Vacation
MUSC 1201	4	Music in context elective	4			
ENGW 1111	4	Elective	4			
MUSC 1000	1	Elective	4			
Elective	4					
		17	16	0		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Music in context course	4	Co-op 1	4	Co-op 1		Vacation
Music elective	4					
Elective	4					
Elective	4					
EEAM 2000	1					
		17	0	0		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Music in context course	4	Co-op 2	4	Co-op 2		Vacation
Music elective	4					
Music theory course	4					
Elective	4					
		16	0	0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music in context course	4	Elective	4	Vacation		Vacation	
Music elective	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16		0		0

Year 5

Fall	Hours	Spring	Hours
Elective	4	Capstone	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Music with Concentration in Music Industry, BS

The Bachelor of Science in Music with Concentration in Music Industry, the first such undergraduate program offered in Boston, is designed for students with an interest in fields such as artist management; the music products industry; the recording industry; arts administration; contracting and legal issues; financial and economics aspects of the music industry; and broadcast, mobile, and online media technologies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Analyzing and Using Data (AD) are met through the major course requirements.

NUpath requirements Difference and Diversity (DD) and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Music Industry Requirements

Code	Title	Hours
Music Core		
MUSC 1000	Music at Northeastern	1
MUSC 1001	Music in Everyday Life	4
Music Theory Placement		

All students must take a theory placement exam. Students who do not place into MUSC 1201 must first take the following:

MUSC 1119	Fundamentals of Western Music Theory	4
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Music Theory Requirement

MUSC 1201	Music Theory 1	4
MUSI 1204	Analyzing Popular Genres	4

Music in Context

Choose one from each of these categories: "Traditional," "Ethnomusicology," "Contemporary," and "Creative." Of the courses from "Traditional," "Ethnomusicology," "Contemporary," at least two must be at the 2000-level or higher. Courses may not double count across these areas.

Traditional (complete one): 4

MUSC 1106	Women in Music
MUSC 1109	Introduction to Art, Drama, and Music
MUSC 1136	What's Playing at Symphony?
MUSC 2310	Popular Music Since 1945
MUSC 2311	Historical Traditions: America
MUSC 2312	Historical Traditions: Classical
MUSC 2320	40,000 Years of Music Technology
MUSC 2340	Divas, DJs, and Double Standards
MUSC 3470	War and Music
MUSC 3550	Historical Traditions: Special Topics

Ethnomusicology (complete one): 4

MUSC 1131	Music of Latin America and the Caribbean
MUSC 2101	Black Popular Music
MUSC 2130	Music of Asia
MUSC 2313	Historical Traditions: World
MUSC 2330	Musical Communities of Boston
MUSC 3550	Historical Traditions: Special Topics
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology
MUSI 3401	Hip Hop in the Music Industry

Contemporary (complete one): 4

MUSC 1106	Women in Music
MUSC 1110	Music in Popular Culture
MUSC 1112	Jazz
MUSC 1113	Film Music
MUSC 1141	Wired for Sound
MUSC 2101	Black Popular Music
MUSC 2315	History of Electronic Music
MUSC 2317	Punk Rock
MUSC 2340	Divas, DJs, and Double Standards
MUSC 2351	Music, Sound, and the Screen
MUSC 3560	Topics in Music since 1900
MUSI 3401	Hip Hop in the Music Industry

Creative (complete one): 4

MUST 1220	Introduction to Music Technology
MUST 1301	Introduction to Composition
MUSC 2208	Jazz Improvisation
MUSC 2209	Conducting
MUSC 2210	Introduction to Songwriting

Music Ensemble: May substitute four 1-semester-hour applied courses (ensembles and/or lessons) for one 4-semester-hour creative course.

MUSC 1901	Music Lessons 1
MUSC 1902	Music Lessons 2
MUSC 1904	Chorus
MUSC 1905	Concert Band
MUSC 1906	Orchestra
MUSC 1907	Wind Ensemble
MUSC 1911	Jazz Ensemble
MUSC 1912	Rock Ensemble
MUSC 1913	Blues/Rock Ensemble
MUSC 1914	Create Your Own Music
MUSC 1915	Chamber Ensemble
MUSC 1916	Contemporary Music Ensemble
MUSC 1917	Jazz Choir and Combo
MUSC 1918	World Music Ensemble
MUSC 1919	Fusion Ensemble
MUSC 1920	Pep Band

Music Industry

MUSI 1230	Introduction to Music Industry	4
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Music Industry Electives

Complete seven music industry electives, taking a minimum of one course in each of the following four categories and at least three courses from a single category. 28

Creating and Producing

Note: MUSI 1230 is not a prerequisite for the following courses:

MUSC 2210	Introduction to Songwriting
MUSC 2211	Advanced Songwriting
MUSI 2101	Demo Production for Songwriters
MUSI 2232	Music Recording 1
MUSI 2331	Music Recording 2
MUSI 3341	Music Recording 3—Mixing and Mastering
MUST 1220	Introduction to Music Technology
MUST 3421	Digital Audio Processing

Legal Aspects

Note: MUSI 1230 is a prerequisite for the following courses:

MUSI 2231	Music Licensing for Media
MUSI 3333	The Record Industry
MUSI 3335	Copyright Law for Musicians
MUSI 2341	Music Supervision 1

Music Business and Management

Note: MUSI 1230 is a prerequisite for the following courses:

MUSI 2233	Music in the Online and Mobile Environment
MUSI 3332	Artist Management
MUSI 3334	Music Products Industry
MUSI 3338	Music Industry Marketing and Promotion
MUSI 3340	Concert Promotion and Venue Management
MUSI 4530	Music Entrepreneurship

Music Industry Studies

Note: MUSI 1230 is a prerequisite for the following MUSI courses only:

MUSI 3401	Hip Hop in the Music Industry
MUSI 4601	Seminar in Music Industry

Business Course Requirements

Code	Title	Hours
Economics		
ECON 1116	Principles of Microeconomics	4
Accounting		
ACCT 1209	Financial Accounting and Reporting	4
Business Elective		
Complete one business course in the following subject areas:		4
ACCT, BUSN, ENTR, FINA, HRMG, INTB, MGMT, ORGB, MGSC, MISM, MKTG, SCHM, or STRT		

Capstone for Music Industry

Code	Title	Hours
Complete one of the following: 4		
MUSI 4601	Seminar in Music Industry	
MUSI 4530	Music Entrepreneurship	

Music Industry Major Credit Requirement

Complete 77 semester hours in the major. Minimum 2.667 GPA is required in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1001	4	MUSC 1201	4	Elective	4	Vacation	0
MUSC 1119	4	ACCT 1209	4	Elective	4		
MUSI 1230	4	ECON 1116	4				
ENGW 1111	4	Music industry elective	4				
MUSC 1000	1						
		17			16		
						8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 1204	4	Music industry elective	4	Vacation	0	Co-op 1	0
Music industry elective	4	Business elective	4				
Music in context course	4	Music in context course	4				
Elective	4	Elective	4				
		EEAM 2000	1				
		16			17		
						0	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op 1	0	Music in context course	4	Elective	4	Co-op 2	0
		Music industry elective	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op 2	0	Music industry elective	4	Vacation	4	Co-op 3	0
		Music in context course	4				
		Music industry elective	4				
		Elective	4				
	0		16		0		0

Year 5			
Fall	Hours	Spring	Hours
Co-op 3	0	Music industry capstone	4
		Music industry elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1001	4	MUSC 1201	4	Elective	4	Vacation	0
MUSC 1119	4	ACCT 1209	4	Elective	4		
MUSI 1230	4	ECON 1116	4				
ENGW 1111	4	Music industry elective	4				
MUSC 1000	1						
	17		16		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 1204	4	Co-op 1	0	Co-op 1	0	Elective	4
EEAM 2000	1					Elective	4
Music industry elective	4						

Music in context course	4				
Elective	4				
	17		0		0
					8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music industry elective	4	Co-op 2	0	Co-op 2	0	Vacation	0
Business elective	4						
Music in context course	4						
Elective	4						
	16		0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music industry elective	4	Co-op 3	0	Co-op 3	0	Vacation	0
Music in context course	4						
Music industry elective	4						
Elective	4						
	16		0		0		0

Year 5			
Fall	Hours	Spring	Hours
Music in context course	4	Music industry capstone	4
Music industry elective	4	Music industry elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Sample Four Years, One Co-op in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000	1	ACCT 1209	4	Elective	4	Vacation	0
MUSC 1001	4	ECON 1116	4	Elective	4		
MUSC 1119	4	MUSC 1201	4				
MUSI 1230	4	Music industry elective	4				
ENGW 1111	4						
	17		16		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 1204	4	Business elective	4	Vacation		Co-op	
Music industry elective	4	Music industry elective	4				
Music in context course	4	Music in context course	4				
Elective	4	Elective	4				
		EEAM 2000	1				
		16		17		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Music industry elective	4	Elective	4	Vacation	
		Music in context course	4	Elective	4		
		Elective	4				
		Elective	4				
		0		16		8	

Year 4			
Fall	Hours	Spring	Hours
Music industry elective	4	Music industry elective	4
Music industry elective	4	Music industry capstone	4
Music in context course	4	Elective	4
Elective	4	Elective	4
		16	

Total Hours: 130

Music with Concentration in Music Technology, BS

The Bachelor of Science in Music with Concentration in Music Technology focuses on the creative application of digital sound technologies to a broad range of artistic, social, and industrial purposes, including experimental composition, film, video, theatre, game design, mobile applications, sound design for urban environments, and beyond. An emphasis is maintained throughout on imaginative exploration, collaboration across disciplines, and real-world experience.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

- NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), and Analyzing and Using Data (AD) are met through the major course requirements.
- NUpath requirements Difference and Diversity (DD) and Formal and Quantitative Reasoning (FQ) may be met through electives in the major.
- NUpath requirements Natural and Designed World (ND), Societies and Institutions (SI), and Ethical Reasoning (ER) must be met through general electives.

General Music Requirements

Code	Title	Hours
Introduction to College		
MUSC 1000	Music at Northeastern	1
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Complete one of the following: 4		
MUST 2320	Sound Design	
MUSC 1250	Instrumentation and Orchestration	
MUSC 2111	Algebra and Geometry of Music	
Music in Context		
A grade of C or higher is required. Choose one from each of these categories: "Traditional," "Ethnomusicology," "Contemporary," and "Creative." Of the courses from "Traditional," "Ethnomusicology," "Contemporary," at least two must be at the 2000-level or higher. Courses may not double count across these areas.		
<i>Introductory Class</i>		
MUSC 1001	Music in Everyday Life	4
<i>Traditional</i>		
Complete one of the following: 4		
MUSC 2311	Historical Traditions: America	
MUSC 2312	Historical Traditions: Classical	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2340	Divas, DJs, and Double Standards	
MUSC 3470	War and Music	
MUSC 3550	Historical Traditions: Special Topics	
<i>Ethnomusicology</i>		
Complete one of the following: 4		
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	
MUSC 2313	Historical Traditions: World	
MUSC 2330	Musical Communities of Boston	
MUSC 3550	Historical Traditions: Special Topics	

MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology
MUSI 3401	Hip Hop in the Music Industry

Contemporary

Complete one of the following: 4

MUSC 1112	Jazz
MUSC 1113	Film Music
MUSC 2315	History of Electronic Music
MUSC 2101	Black Popular Music
MUSC 2310	Popular Music Since 1945
MUSC 2315	History of Electronic Music
MUSC 2317	Punk Rock
MUSC 2320	40,000 Years of Music Technology
MUSC 2340	Divas, DJs, and Double Standards
MUSC 2351	Music, Sound, and the Screen
MUSC 3560	Topics in Music since 1900
MUSI 3401	Hip Hop in the Music Industry

Music Industry

Complete one of the following: 4

MUSI 1230	Introduction to Music Industry
MUSI 2331	Music Recording 2
MUSI 3335	Copyright Law for Musicians

Music Technology Requirements

Code	Title	Hours
Required Courses		
MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
MUSC 2350	Acoustics and Psychoacoustics of Music	4
Restricted Electives		
Complete two of the following:		8
MUST 4520	Interactive Music Programming	
MUST 4610	Composition for Electronic Instruments	
MUST 3540	Special Topics in Music Technology	
Capstone		
MUST 4611	Music Technology Capstone/Senior Recital	4

Supporting Courses

Code	Title	Hours
Computer Science		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
College Elective		
Complete one of the following:		4
ARTD 2100	Narrative Basics	
ARTF 2220	4D Fundamentals: Sequence and Drawing	
ARTF 2223	5D Fundamentals: Experience and Drawing	
ARTD 3480	Video: Sound and Image	
CINE 3500	Film Theory	
GAME 1110	Games and Society	
GAME 2500	Foundations of Game Design	

MSCR 1220	Media, Culture, and Society
MSCR 1100	Film 101
MSCR 3435	Media Industries
THTR 1131	Technical Theatre 1
THTR 1270	Introduction to Theatrical Design
THTR 2370	Lighting Design

Music Technology Credit Requirement

Complete 74 semester hours in the major.
A minimum 2.667 GPA is required in the major courses.

Program Requirement

129 total semester hours required

Plan of Study

Sample Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000	1	MUSC 1202	4	Vacation		Vacation	0
MUSC 1201	4	MUSC 2350	4				
MUST 1220	4	Music in context: traditional	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
		17		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUST 1301	4	CS 2500 and CS 2501	5	Vacation		Vacation	
MUST 2431	4	Elective	4				
MUSC 3541	4	Elective	4				
Music theory/composition elective	4	Music in context: contemporary	4				
		16		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music technology restricted elective	4	CAMD elective	4	Vacation		Vacation	
Music in context: ethnomusical	4	Elective	4				
Music industry elective	4	Elective	4				
Elective	4	Elective	4				
		16		16		0	

Year 4

Fall	Hours	Spring	Hours
Music technology restricted elective	4	MUST 4611	4

Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
16		16	

Total Hours: 130

Sample Four Years, One Co-op in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1001	4	MUSC 1202	4	Vacation		Vacation	
MUSC 1201	4	MUSC 2350	4				
MUST 1220	4	Music in context: traditional	4				
ENGW 1111	4	Elective	4				
MUSC 1000	1						
17		16		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUST 1301	4	CS 2500 and CS 2501	5	2 Electives	8	2 Electives	8
MUST 2431	4	Music in context: contemporary	4				
MUSC 3541	4	Elective	4				
Music theory/composition elective	4	Elective	4				
16		17		8		8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music technology restricted elective	4	Co-op		Co-op			
Music in context: ethnomusicol	4						
CAMD elective	4						
Music industry elective	4						
EEAM 2000	1						
17		0		0		0	

Year 4

Fall	Hours	Spring	Hours
Music technology restricted elective	4	MUST 4611	4
Elective	4	Elective	4
Elective	4	Elective	4

Elective	4	Elective	4
16		16	

Total Hours: 131

Sample Five Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000	1	MUSC 1202	4	Vacation		Vacation	
MUSC 1201	4	MUSC 2350	4				
MUST 1220	4	Music in context: traditional	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
17		16		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUST 1301	4	CS 2500 and CS 2501	5	Vacation		Vacation	
MUST 2431	4	Music in context: contemporary	4				
MUSC 3541	4	Elective	4				
Music theory/composition elective	4	Elective	4				
16		17		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music in context: ethnomusicological	4	Co-op 1		Co-op 1		Vacation	
Music industry elective	4						
Elective	4						
Elective	4						
EEAM 2000	1						
17		0		0		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Music technology restricted elective	4	Co-op 2		Co-op 2		Vacation	
CAMD elective	4						
Elective	4						
Elective	4						
16		0		0		0	

Year 5			
Fall	Hours	Spring	Hours
Music technology restricted elective	4	MUST 4611	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 131

Computer Science and Music with Concentration in Music Technology, BS

The computer science and music combined major with concentration in music technology focuses on the creative application of digital sound technologies to a broad range of artistic, social, and industrial purposes. An emphasis is maintained throughout on imaginative exploration, collaboration across disciplines, and real-world experience. It is designed to give students a firm foundation in music and computing for digital audio technologies. This program is recommended for students with a strong background in music prior to entering Northeastern.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
IS 4300	Human Computer Interaction (Integrative)	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010
IS 2000 or higher, except IS 4900
DS 2000 or higher, except DS 4900

Music Courses

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Music in Context		
MUSC 1001	Music in Everyday Life	4
Contemporary		
Complete one of the following:		4
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2315	History of Electronic Music	
MUSC 2320	40,000 Years of Music Technology	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	
Music Technology		
MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
MUSC 2350	Acoustics and Psychoacoustics of Music	4
Music Industry		
Complete one of the following:		4
MUSI 1230	Introduction to Music Industry	
MUSI 2331	Music Recording 2	
MUSI 3335	Copyright Law for Musicians	
Music Technology Electives		
Complete two of the following:		8
MUST 4520	Interactive Music Programming	
MUST 4610	Composition for Electronic Instruments	
MUST 4XXX	Composing with Image and Sound	
MUST 4XXXX	Spatial Audio	
MUST 3540	Special Topics in Music Technology	
Music Technology Capstone		
MUST 4611	Music Technology Capstone/Senior Recital	4

Foundations of Psychology

Code	Title	Hours
PSYC 1101	Foundations of Psychology	4

Computing and Social Issues

Code	Title	Hours
Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Interpreting Culture
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MUST 1220 (*)	4	CS 3200	4		
CS 2500 and CS 2501	5	MUSC 1202 (*)	4				
MUSC 1201 (*)	4	MUSC 2350	4				
ENGW 1111	4						
		19		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		ENGW 3302	4
MUSC 1001	4					Elective	4
CS 3000	4						
MUST 1301 (*)	4						
Elective	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 3541	4	Co-op		0 Co-op		0 Vacation	0
MUST 2431	4						
Contemporary music requirement*	4						
Computer science elective	4						
		16		0		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 4300	4	Co-op		0 Co-op		0 Vacation	0
PSYC 1101	4						
THTR 1170	1						
Music technology elective*	4						
Computer science elective	4						
		17		0		0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4500 and CS 4501	4	MUST 4611 (*)	4				
Music technology elective*	4	Elective	4				

Computing and social issues	4	Music industry elective	4
Elective	4	Elective	4
16		16	

Total Hours: 134

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MUST 1220 (*)	4	CS 3200	4		
CS 2500 and CS 2501	5	MUSC 1202 (*)	4				
MUSC 1201 (*)	4	MUSC 2350	4				
ENGW 1111	4						
19		17		8		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		ENGW 3302	4
MUSC 1001	4					Elective	4
CS 3000	4						
MUST 1301 (*)	4						
Computer science elective	4						
17		0		0		8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 3541	4	Co-op		Co-op		PSYC 1101	4
MUST 2431	4					Elective	4
Contemporary music requirement*	4						
Music technology elective*	4						
16		0		0		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
IS 4300	4	MUST 4611 (*)	4	Elective	4
CS 4500 and CS 4501	4	Elective	4	Elective	4
THTR 1170	1	Computing and social issues	4		
Music technology elective*	4	Music industry elective	4		

Computer science elective	4		
17		16	
		8	

Total Hours: 134

*Indicates course must be taken in the term listed.

Game Design and Music with concentration in Music Technology, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Game Design Major Requirements

Code	Title	Hours
Art + Design Required Foundation Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4
Required Games Courses		
GAME 1110	Games and Society	4
GAME 1850	Experimental Game Design	4
GAME 2500	Foundations of Game Design	4
GAME 3700	Rapid Idea Prototyping for Games	4
GAME 3800	Game Concept Development and Production	4
Game Design Electives		
Complete five of the following:		20
ARTG 2260	Programming Basics	
ARTG 3250	Physical Computing	
GAME 2010	The Business of Games	
GAME 2355	Narrative for Games	
GAME 2650	Introduction to Game Research Methods	
GAME 2750	Games Criticism and Theory	
GAME 2755	Games and Social Justice	
GAME 2950	Game Studio	
GAME 3055	Playful Design	
GAME 3300	Game Interface Design	
GAME 3400	Level Design and Game Architecture	
GAME 4155	Designing Imaginary Worlds	
GAME 4700	Game Design Capstone 1	

Music Requirements

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Music in Context		
MUSC 1001	Music in Everyday Life	4
Contemporary		
Complete one from the following:		4
MUSC 2315	History of Electronic Music	
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2320	40,000 Years of Music Technology	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	
Music Technology		
MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
MUSC 2350	Acoustics and Psychoacoustics of Music	4

Music Technology Electives

Complete two from the following:		8
MUST 4520	Interactive Music Programming	
MUST 4610	Composition for Electronic Instruments	
MUST 3540	Special Topics in Music Technology	

Integrative Requirement

Code	Title	Hours
MUST 1220	Introduction to Music Technology	4
Capstone		
Complete one of the following:		4
MUST 4611	Music Technology Capstone/Senior Recital	
GAME 4701	Game Design Capstone 2	

Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

138 total semester hours required

Music and Communication Studies with Concentration in Music Industry, BS

The Bachelor of Science in Music with Concentration in Music Industry, the first such undergraduate program offered in Boston, is designed for students with an interest in fields such as artist management; the music products industry; the recording industry; arts administration; contracting and legal issues; financial and economics aspects of the music industry; and broadcast, mobile, and online media technologies.

The Department of Communication Studies is committed to providing students with both the communication skills and the understanding of the communication process required to thrive in a complex and changing society. Majors are required to demonstrate a mastery of the

fundamentals of effective communication, to learn the fundamentals of communication theory and practice, and to develop a distinct area of emphasis. Some of the more popular areas include argumentation and advocacy, organizational and health communication, international and intercultural communication, digital communication and social media, and media production. The curriculum is designed to enhance the understanding of human communication in a variety of contexts, to empower students to become informed and engaged citizens, and to provide the knowledge and skills required to live a rich personal and professional life.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Music Industry Requirements

Code	Title	Hours
Introduction to College		
MUSC 1000	Music at Northeastern	1
Music Core		
MUSC 1001	Music in Everyday Life	4
Music Theory Placement		
All students must take a theory placement exam. Students who do not place into MUSC 1201 must first take the following:		
MUSC 1119	Fundamentals of Western Music Theory	4
Music Theory Requirement		
MUSC 1201	Music Theory 1	4
Introductory Music Industry		
MUSI 1230	Introduction to Music Industry	4
Music in Context		
Choose one course from traditional, ethnomusicology, or contemporary categories.		4
Traditional		
MUSC 2311	Historical Traditions: America	
MUSC 2312	Historical Traditions: Classical	
MUSC 3470	War and Music	
MUSC 3550	Historical Traditions: Special Topics	
Ethnomusicology		
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	

MUSC 2313	Historical Traditions: World	
MUSC 3550	Historical Traditions: Special Topics	

Contemporary

MUSC 2101	Black Popular Music	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	

Music Industry Electives

Complete three of the following: 12

MUSI 1204	Analyzing Popular Genres	
MUSI 2101	Demo Production for Songwriters	
MUSC 2210	Introduction to Songwriting	
MUSI 2231	Music Licensing for Media	
MUSI 2232	Music Recording 1	
MUSI 2233	Music in the Online and Mobile Environment	
MUSI 2341	Music Supervision 1	
MUSI 2540	Special Topics in Music Industry	
MUSI 3332	Artist Management	
MUSI 3333	The Record Industry	
MUSI 3334	Music Products Industry	
MUSI 3335	Copyright Law for Musicians	
MUSI 3338	Music Industry Marketing and Promotion	
MUSI 3340	Concert Promotion and Venue Management	
MUSI 3401	Hip Hop in the Music Industry	
MUSI 4530	Music Entrepreneurship	
MUSI 4601	Seminar in Music Industry	
MUST 1220	Introduction to Music Technology	
MUST 3421	Digital Audio Processing	

Business Course

ACCT 1209	Financial Accounting and Reporting	4
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Communication Studies Requirements

Code	Title	Hours
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Communication Studies Common Requirements

COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course

Complete one of the following: 4

COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course

Complete one of the following: 4

COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	

COMM 2551	Free Speech in Cyberspace	
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Writing-Intensive Courses

Complete two of the following: 8

COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4535	Nonverbal Social Interaction	
COMM 4605	Youth and Communication Technology	
COMM 4631	Crisis Communication and Image Management	

Communication Studies Electives

Complete three COMM courses. 12

Integrative Requirement

Code	Title	Hours
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Complete one of the integrative options below. If a communication studies course is taken, an additional music industry course is required, chosen from the list of music industry electives above.

Music Option

Complete one of the following:

MUSI 4601	Seminar in Music Industry	
MUSI 4530	Music Entrepreneurship	

Communication Studies Option

Complete two of the following. One communication studies course is required:

COMM 4608	Strategic Communication Capstone	
or COMM 4625	Online Communities	
MUSC 2000 to MUSC 5999		
MUSI 2000 to MUSI 5999		
MUST 2000 to MUST 5999		

Communication Studies Major Grade Requirement

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000 or COMM 1000	1	ENGW 1111	4	Elective	4	Vacation	
MUSC 1001	4	MUSI 1230	4	Elective	4		
MUSC 1201	4	Communication studies foundational course	4				
COMM 1101	4	Music in context elective	4				
COMM 1112 or 2301	4						
		17		16		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Communication studies elective	4	Vacation	4	Co-op	
Elective	4	Elective	4				
Music industry elective	4	Music industry elective	4				
Elective	4	Elective	4				
		EEAM 2000	1				
		16		17		0	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGW 3314 or 3315	4	Communication studies elective	4	Co-op	
		Communication studies elective	4	Communication studies writing-intensive	4		
		ACCT 1209	4				
		Elective	4				
		0		16		8	
						0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Communication studies writing-intensive	4	Vacation	4	Co-op	
		Music industry elective	4				
		Integrative course	4				
		Elective	4				
		0		16		0	
						0	

Year 5

Fall	Hours	Spring	Hours
Co-op		Capstone	4
		Elective	4
		Elective	4
		Elective	4
		0	
		16	

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 1000 or COMM 1000	1	Communication studies foundational course	4	Elective	4	Vacation	
MUSC 1001	4	MUSI 1230	4	Elective	4		
MUSC 1201	4	ENGW 1111	4				
COMM 1101	4	Music in context elective	4				
COMM 1112 or 2301	4						
		17		16		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op		Co-op		Vacation	
Music industry elective	4						
Communication studies elective	4						
EEAM 2000	1						
		17		0		0	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies elective	4	Co-op		Co-op		Communication studies writing-intensive	4
Communication studies elective	4					Elective	4
ACCT 1209	4						
ENGW 3314 or 3315	4						
		16		0		0	
						8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op		Co-op		Vacation	
Music industry elective	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Music industry elective	4	Capstone	4
Integrative requirement	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Physics and Music with Concentration in Music Technology, BS

The combined major in physics and music provides a strong foundation in classical and modern physics, including studies of the various physical phenomena including electromagnetism, dynamics, building blocks of matter, energy, and radiation. It also provides students with a solid background in composition for acoustic and electronic instruments and for combined and/or interactive live and digital sources. The combined major allows students to learn how physical principles influence sound production and propagation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
<i>Physics 2</i>		
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5

Intermediate Physics

PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4

Advanced Physics

PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5115	Quantum Mechanics	4
PHYS 5318	Principles of Experimental Physics	4

Music Requirements

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Music in Context		
MUSC 1001	Music in Everyday Life	4
<i>Contemporary</i>		

Complete one course from the following:

MUSC 2315	History of Electronic Music	4
MUSC 2101	Black Popular Music	4
MUSC 2310	Popular Music Since 1945	4
MUSC 2320	40,000 Years of Music Technology	4
MUSC 3560	Topics in Music since 1900	4
MUSI 3401	Hip Hop in the Music Industry	4

Music Technology

MUST 1220	Introduction to Music Technology	4
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Music Technology Electives

Complete two courses from the following:

MUST 3540	Special Topics in Music Technology	8
MUST 4520	Interactive Music Programming	8
MUST 4610	Composition for Electronic Instruments	8

Music Technology Capstone

MUST 4611	Music Technology Capstone/Senior Recital	4
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Physics/Music Integrative Requirements

Code	Title	Hours
Integrative Course Requirements		
MUSC 2350	Acoustics and Psychoacoustics of Music	4

Physics and Music Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation	
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	MUST 1220	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
		18	17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		Vacation	
MATH 2321	4	MUSC 1202	4				
MUSC 1201	4	MUSC 2350	4				
Elective	4	MUSC xxxx contemporary elective	4				
		16	16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2371 ³	3	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 2372 ³	1					Elective	4
MUST 1301	4						
MUST 2431	4						
Elective	4						
EESC 2000	1						
		17	0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		Co-op		Vacation	
MUSC 3541	4						
MUSC xxxx music technology elective	4						
Music elective	4						
		16	0		0		0

Year 5			
Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
ENGW 3307	4	MUST 4611	4
MUSC xxxx music technology elective	4		
		12	8

Total Hours: 128

FOUR YEARS, ONE CO-OP IN SPRING/SUMMER 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation	
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	MUST 1220	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
		18	17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		Elective	4
PHYS 2371 ³	3	MUSC 1202	4			Elective	4
PHYS 2372 ³	1	MUSC 2350	4				
MATH 2321	4	MUSC xxxx contemporary elective	4				
MUSC 1201	4						
		16	16		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		Co-op		PHYS 3600 ⁴	4
MUST 1301	4					ENGW 3307	4
MUST 2431	4						
MUST 3421	4						
EESC 2000	1						
		17	0		0		8

Year 4			
Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
MUSC 3541	4	MUST 4611	4
MUSC xxxx music technology elective	4		
MUSC xxxx music technology elective	4		
		16	8

Total Hours: 124

- ¹ PHYS 2303 offered fall and spring
- ² PHYS 2305 offered every spring and summer 2 (even years)
- ³ PHYS 2371/2372 offered every fall
- ⁴ PHYS 3600 offered every summer 1 and summer 2
- ⁶ PHYS 3602 offered every fall and spring
- ⁸ PHYS 5115 offered every fall and spring
- ⁹ PHYS 5318 offered every spring

Ethnomusicology, Minor

The minor in ethnomusicology offers students an interdisciplinary approach to exploring the richness of music in its cultural context.

The foundation of the minor is a unique introductory course, Music in Everyday Life (MUSC 1001), which investigates many dimensions of musical experience and music's connections to society. Students take in-depth electives that focus on the music of a region, tradition, global popular trends, etc. The minor culminates in a seminar that invites students to conduct their own ethnographic projects in and around Boston. Projects involving music's role in social justice issues are exciting options.

Ethnomusicological studies would enrich many programs or degrees, including but not limited to African-American studies; sociology; anthropology; Asian studies; Middle Eastern studies; Jewish studies; world language studies; cultural studies; women, gender, and sexuality studies; Latin American studies; religion; urban studies; Art + Design; cinema studies; communication studies; international affairs; theatre; political science; or health sciences. Music majors may also add this minor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4
Complete one of the following:		4
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology	
MUSC 2330	Musical Communities of Boston	

Ethnomusicology Electives

Code	Title	Hours
Complete two of the following:		8
MUSC 1112	Jazz	
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	

GPA Requirement

2.000 GPA required in the minor

Music, Minor

The minor in music offers students an opportunity to explore electives in music along with a music theory course appropriate to the student's level of experience. The foundation of the minor is a unique introductory course, Music in Everyday Life (MUSC 1001), which investigates many dimensions of the musical experience and music's contributions to culture.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

A grade of C or better is required in all music courses.

Music Theory and Musicianship

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4
Complete one course from the following. Music theory placement test permits placement into Music Theory 1 or higher.		4
MUSC 1119	Fundamentals of Western Music Theory	
MUSC 1201	Music Theory 1	
MUSC 1202	Music Theory 2	
MUSI 1204	Analyzing Popular Genres	

Music Literature Electives

Code	Title	Hours
Complete two courses from the following. Four semesters of ensembles may be substituted for one elective:		8
MUSC 1106	Women in Music	
MUSC 1109	Introduction to Art, Drama, and Music	
MUSC 1110	Music in Popular Culture	
MUSC 1111	Rock Music	
MUSC 1112	Jazz	
MUSC 1113	Film Music	
MUSC 1114	Mozart	
MUSC 1115	Debussy and the Music of Paris	
MUSC 1116	Beethoven	
MUSC 1118	Music Therapy 1	
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 2311	Historical Traditions: America	
MUSC 2101	Black Popular Music	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2330	Musical Communities of Boston	
MUSC 2312	Historical Traditions: Classical	
MUSC 2313	Historical Traditions: World	
MUSC 2317	Punk Rock	
MUSC 2340	Divas, DJs, and Double Standards	
MUSC 2351	Music, Sound, and the Screen	
MUSC 3550	Historical Traditions: Special Topics	
MUSC 3560	Topics in Music since 1900	
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology	

Ensembles

All ensembles are 1 credit:

MUSC 1904	Chorus
MUSC 1905	Concert Band
MUSC 1906	Orchestra
MUSC 1907	Wind Ensemble
MUSC 1911	Jazz Ensemble
MUSC 1912	Rock Ensemble

MUSC 1913	Blues/Rock Ensemble
MUSC 1914	Create Your Own Music
MUSC 1915	Chamber Ensemble
MUSC 1916	Contemporary Music Ensemble
MUSC 1917	Jazz Choir and Combo
MUSC 1918	World Music Ensemble
MUSC 1919	Fusion Ensemble
MUSC 1920	Pep Band

GPA Requirement

2.000 GPA required in the minor

Music Composition, Minor

The minor in composition offers student composers at all levels a concentrated opportunity to build composition skills. The minor includes a foundation in music theory and introduction to compositional approaches, composition lessons, and additional course work to broaden the student composer's understanding and appreciation of the intersection of music and culture.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 1301	Introduction to Composition	4
MUSC 1903	Composition Lessons	1

Elective

Code	Title	Hours
Complete one of the following: 4		
MUSC 1250	Instrumentation and Orchestration	
MUSC 3541	Music Analysis Seminar	
MUST 1220	Introduction to Music Technology	
MUST 2320	Sound Design	

GPA Requirement

2.000 GPA required in the minor

Music Industry, Minor

The music industry program is the first such undergraduate program offered in Boston and is designed for students with an interest in fields such as artist management; the music products industry; the recording industry; arts administration; contracting and legal issues; financial and economics aspects of the music industry; and broadcast, mobile, and online media technologies.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

A C grade or better is required in all music courses.

Music Core

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4

Music Industry

Code	Title	Hours
MUSI 1230	Introduction to Music Industry	4

Music Industry Electives

Code	Title	Hours
Complete three of the following:		12

MUSC 1119	Fundamentals of Western Music Theory
MUSC 2210	Introduction to Songwriting
MUSI 2101	Demo Production for Songwriters
MUSI 2231	Music Licensing for Media
MUSI 2232	Music Recording 1
MUSI 2233	Music in the Online and Mobile Environment
MUSI 2341	Music Supervision 1
MUSI 2540	Special Topics in Music Industry
MUSI 3332	Artist Management
MUSI 3333	The Record Industry
MUSI 3334	Music Products Industry
MUSI 3335	Copyright Law for Musicians
MUSI 3338	Music Industry Marketing and Promotion
MUSI 3340	Concert Promotion and Venue Management
MUSI 3401	Hip Hop in the Music Industry
MUSI 4530	Music Entrepreneurship
MUSI 4601	Seminar in Music Industry
MUST 1220	Introduction to Music Technology
MUST 3421	Digital Audio Processing

GPA Requirement

2.000 GPA required in the minor

Music Performance, Minor

The minor in music performance offers students an opportunity to improve on their instrument or voice through ensemble performance, private lessons, recitals, and instruction in music theory. Students also take an elective in music that can be used to explore a genre, musical culture, or composer related to the student's performance area or can be used to broaden the student's musical horizons beyond their area of focus.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Acceptance into the minor requires an audition.

Music Core

A grade of C or higher is required in music theory courses:

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4
MUSC 1201	Music Theory 1	4

Music Lessons

Code	Title	Hours
Complete four music lesson courses (courses are repeatable):		4
MUSC 1901	Music Lessons 1	
MUSC 1902	Music Lessons 2	

Music Ensemble

Code	Title	Hours
Complete five music ensembles:		5
MUSC 1904	Chorus	
MUSC 1905	Concert Band	
MUSC 1906	Orchestra	
MUSC 1907	Wind Ensemble	
MUSC 1911	Jazz Ensemble	
MUSC 1912	Rock Ensemble	
MUSC 1913	Blues/Rock Ensemble	
MUSC 1914	Create Your Own Music	
MUSC 1915	Chamber Ensemble	
MUSC 1916	Contemporary Music Ensemble	
MUSC 1917	Jazz Choir and Combo	
MUSC 1918	World Music Ensemble	
MUSC 1919	Fusion Ensemble	
MUSC 1920	Pep Band	

Music Electives

Code	Title	Hours
Complete one of the following:		4
MUSC 1106	Women in Music	
MUSC 1109	Introduction to Art, Drama, and Music	
MUSC 1110	Music in Popular Culture	
MUSC 1111	Rock Music	
MUSC 1112	Jazz	
MUSC 1113	Film Music	
MUSC 1114	Mozart	
MUSC 1115	Debussy and the Music of Paris	
MUSC 1116	Beethoven	
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 1136	What's Playing at Symphony?	
MUSC 1250	Instrumentation and Orchestration	
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	
MUSC 2208	Jazz Improvisation	
MUSC 2209	Conducting	
MUSC 2210	Introduction to Songwriting	
MUSC 2310	Popular Music Since 1945	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2330	Musical Communities of Boston	
MUSC 2340	Divas, DJs, and Double Standards	

MUSC 2351	Music, Sound, and the Screen
MUSC 3470	War and Music
MUSC 3540	Special Topics in Music Analysis
MUSC 3541	Music Analysis Seminar
MUSC 4641	Seminar in Ethnomusicology: Issues in Fieldwork and Methodology

Music Recitals

Code	Title	Hours
MUSC 3410	Recital 1	1
MUSC 4622	Recital 2	1

GPA Requirement

2.000 GPA required in the minor

Music Recording, Minor

The minor in music recording offers students a chance to explore the theory and practice of recording from basic principles through studio sessions and mixing/mastering. An elective rounds out the minor, giving students an opportunity to learn about the intersection of recording and copyright, technology, entertainment, and other disciplines.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
MUSI 2232	Music Recording 1	4
MUSI 2331	Music Recording 2	4
MUSI 3341	Music Recording 3—Mixing and Mastering	4

Recording Elective

Code	Title	Hours
Complete one of the following:		4
MUSC 1001	Music in Everyday Life	
MUSI 2233	Music in the Online and Mobile Environment	
MUSI 2341	Music Supervision 1	
MUSI 3335	Copyright Law for Musicians	
MUST 1220	Introduction to Music Technology	
MUST 2320	Sound Design	

GPA Requirement

2.000 GPA required in the minor

Music Technology, Minor

The minor in music technology gives students an opportunity to explore the creative application of digital sound technologies to a broad range of artistic, social, and industrial purposes, including experimental composition, film, video, theatre, game design, mobile applications, sound design for urban environments, and beyond. An emphasis is maintained throughout on imaginative exploration, collaboration across disciplines, and real-world experience.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

A C grade or better is required in all music courses.

Required Courses

Code	Title	Hours
MUSC 1001	Music in Everyday Life	4
MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4

Music Technology Electives

Code	Title	Hours
Complete two of the following:		8
MUSC 2111	Algebra and Geometry of Music	
MUSC 1250	Instrumentation and Orchestration	
MUSC 2315	History of Electronic Music	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2350	Acoustics and Psychoacoustics of Music	
MUSI 2101	Demo Production for Songwriters	
MUST 2320	Sound Design	
MUST 3540	Special Topics in Music Technology	
MUST 4520	Interactive Music Programming	

GPA Requirement

2.000 GPA required in the minor

Musical Theatre, Minor

A minor in musical theatre gives students a practical foundation in all aspects of the theatre including performance, music, design, and the history of the theatre.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
THTR 1130	Introduction to Acting	4
THTR 4882	Special Topics: Theatre Performance (Singing for Musical Theatre)	4

Making Musical Theatre

Code	Title	Hours
Choose one of the following:		1
MUSC 1901	Music Lessons 1	
THTR 1100	Production Experience 1	

Electives

Code	Title	Hours
Choose two of the following:		8
THTR 1101	Introduction to Theatre	
MUSC 2210	Introduction to Songwriting	
THTR 2310	History of Musical Theatre	

THTR 2330 Playwriting

THTR 3570 Musical Theatre Performance

GPA Requirement

2.000 GPA required in the minor

Songwriting, Minor

The minor in songwriting offers students a chance to build songwriting skills through classes that focus on craft, collaboration, music theory, and songwriting business practice.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Music Theory		
Complete one of the following:		4
MUSC 1119	Fundamentals of Western Music Theory	
MUSC 1201	Music Theory 1	
MUSI 1204	Analyzing Popular Genres	
Songwriting		
MUSC 2210	Introduction to Songwriting	4
Songwriting Electives		
Complete two of the following:		8
MUSC 1001	Music in Everyday Life	
MUSC 2211	Advanced Songwriting	
MUSI 2101	Demo Production for Songwriters	
MUSC 2150	Making a Musical: Analysis, Craft, and Creation	
MUSI 3335	Copyright Law for Musicians	
MUSI 2232	Music Recording 1	
MUSI 2331	Music Recording 2	

GPA Requirement

2.000 GPA required in the minor

NEC/NU Joint Certificate Program—Professional Studies Certificate in Music Performance

The Department of Music at Northeastern University (NU) and the New England Conservatory (NEC), administered through its School of Continuing Education, offer a Professional Studies Certificate in Music Performance. This program primarily serves undergraduate music majors who audition competitively and are dedicated to advancing their skills on an instrument or voice in the classical or jazz styles.

The certificate in music performance is *in addition to* the student's NU undergraduate degree—it is an entirely separate and distinct credential. Credits are taken partly at Northeastern University and partly at the New England Conservatory and/or its continuing education division. Those courses taken directly from the New England Conservatory catalog require permission of NEC faculty but are part of a tuition exchange program shared between Northeastern University and the New England Conservatory, so they are treated as part of a Northeastern student's tuition package or otherwise billed like NU classes. Some courses may

be taken through NEC's School of Continuing Education, which is not part of the tuition exchange program; those courses are billed separately over and above tuition at Northeastern University and are not eligible for financial aid. Individual lessons with faculty at the New England Conservatory carry a lab fee each semester, which is billed separately from tuition.

Students should be aware that ensembles at NEC meet primarily during the morning and that academic courses offered at NEC meet primarily in the afternoons.

Program Requirements

Complete all courses listed below unless otherwise indicated.

Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Northeastern University Requirements

Complete 22 credits of course work at Northeastern University as indicated below.

Code	Title	Hours
Music Theory and Musicianship Placement		
All students must take a theory placement exam. Students who do not place into MUSC 1201 or MUSI 1203 must first take the following course:		
MUSC 1119	Fundamentals of Western Music Theory	
Credits for MUSC 1119 do not count toward the certificate.		
Music Theory and Musicianship¹		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
Music in Context (Traditional, Ethnomusicological, Contemporary)		
Complete 8 credits from the following:		8
MUSC 1106	Women in Music	
MUSC 1109	Introduction to Art, Drama, and Music	
MUSC 1110	Music in Popular Culture	
MUSC 1111	Rock Music	
MUSC 1112	Jazz	
MUSC 1113	Film Music	
MUSC 1114	Mozart	
MUSC 1115	Debussy and the Music of Paris	
MUSC 1116	Beethoven	
MUSC 1131	Music of Latin America and the Caribbean	
MUSC 1136	What's Playing at Symphony?	
MUSC 1140	Global Pop Music	
MUSC 1141	Wired for Sound	
MUSC 2101	Black Popular Music	
MUSC 2130	Music of Asia	
MUSC 2311	Historical Traditions: America	
MUSC 2312	Historical Traditions: Classical	
MUSC 2313	Historical Traditions: World	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2330	Musical Communities of Boston	
MUSC 2340	Divas, DJs, and Double Standards	

MUSC 2351 Music, Sound, and the Screen

MUSC 3470 War and Music

Note: Since the following course is repeatable, music majors and combined majors may count the credits for the second time they take this course toward the music performance certificate. Students may utilize special topics courses in music history to fulfill this requirement. If interested in this option, students should consult the coordinator of the certificate programs via email.

MUSC 3550 Historical Traditions: Special Topics

MUSC 3560 Topics in Music since 1900

MUSC 4641 Seminar in Ethnomusicology: Issues in Fieldwork and Methodology

MUSI 3401 Hip Hop in the Music Industry

Ensembles

Complete six music ensembles: 6

MUSC 1904 Chorus

MUSC 1905 Concert Band

MUSC 1906 Orchestra

MUSC 1907 Wind Ensemble

MUSC 1911 Jazz Ensemble

MUSC 1912 Rock Ensemble

MUSC 1913 Blues/Rock Ensemble

MUSC 1914 Create Your Own Music

MUSC 1915 Chamber Ensemble

MUSC 1916 Contemporary Music Ensemble

MUSC 1917 Jazz Choir and Combo

MUSC 1918 World Music Ensemble

MUSC 1919 Fusion Ensemble

MUSC 1920 Pep Band

¹ Music majors with a concentration in music industry may substitute (MUSI 1203) for Music Theory 1 (MUSC 1201) and Analyzing Popular Genres (MUSI 1204) for Music Theory 2 (MUSC 1202).

New England Conservatory Requirements

Complete 26 credits of course work at New England Conservatory School of Continuing Education as indicated below.

Code	Title	Hours
Private Studio Instruction		
Complete 16 credits of (repeatable) private studio instruction with New England Conservatory School of Continuing Education faculty. These credits may be accumulated in units of 2, 3, or 4 credits per semester. All private lessons require audition by NEC/NU faculty in order to assign private teacher placement. After being placed with a private teacher, and working with their certificate advisor, students must confirm with that teacher the length and number of lessons they will receive.		16
MPNC 1102	Music Instruction (2 credits)	
MPNC 1103	Music Instruction (3 credits)	
MPNC 1104	Music Instruction (4 credits)	
Music Technology		
MPNC 1201	Contemporary Music Production and Technology 1	1
Electives		
Complete 7 credits from the following:		7

MPNC 1301	Build Your Voice: Art/Skillful Singing
MPNC 1401	Jazz Ear Training 1
MPNC 1411	Jazz Theory 1
MPNC 1421	Finale Chart Writing
MPNC 1451	Jazz History 1
MPNC 1501	Introduction to Music-in-Education
MPNC 1612	Group Piano Class
MPNC 1621	The Art of Musical Sight-Reading
MPNC 1622	The Art of Practice and Performance
MPNC 1623	Developing Perfect Pitch 1
MPNC 1631	The Accidental Music Teacher: From Musical Artist to Creative Educator
MPNC 1642	Sight-Singing for Singers
MPNC 1801	Introduction to Composition 1
MPNC 1802	Contemporary Improvisation: Skill Building
MPNC 1803	Contemporary Improvisation: Music of the World—The African Diaspora
MPNC 1901	Art and Soul of Cinema: An Appreciation of Film Music
MPNC 1911	Latin American Classical Traditions 1
MPNC 2401	Jazz Ear Training 2
MPNC 2411	Jazz Theory 2
MPNC 2431	Jazz Composition and Analysis
MPNC 2451	Jazz History 2
MPNC 2511	Music-in-Education Seminar
MPNC 2512	Models for Teaching and Learning for Music-in-Education
MPNC 2525	Art and Science of Assessing Music Learning
MPNC 2526	Music, Brain Development, and Learning
MPNC 2547	Cross-Cultural Alternatives for Music-in-Education
MPNC 2548	Teaching and Learning with Music Technology
MPNC 2556	Improvisation in Music Education
MPNC 2561	String Pedagogy
MPNC 2571	Performing Artists in Schools
MPNC 2601	Music Production for Media
MPNC 2612	Piano Pedagogy
MPNC 2623	Developing Perfect Pitch 2
MPNC 2624	Advanced Perfect Pitch
MPNC 2644	Bach Arias for Singers and Instrumentalists
MPNC 2801	Introduction to Composition 2
MPNC 2911	Latin American Classical Traditions 2
MPNC 3401	Jazz Ear Training 3
MPNC 3411	Jazz Theory 3
MPNC 3431	Jazz Arranging
MPNC 3611	Piano Interpretation/Performance Seminar
MPNC 3631	18th-Century Tonal Counterpoint
MPNC 3633	Modal Counterpoint
MPNC 3641	Dramatic Coaching of Songs and Arias

MPNC 3643	Vocal Repertoire: Coaching and Performance
MPNC 3801	Composition Seminar 1
MPNC 3802	Composition Seminar 2
MPNC 4401	Jazz Ear Training 4
MPNC 4411	Jazz Theory 4
MPNC 4581	Music-in-Education Guided Internship
MPNC 4591	Music-in-Education Portfolio
Ensembles	
Complete two music ensembles:	2
MPNC 1712	Baroque Ensemble
MPNC 1713	NEC Voices: A New Choral Experience
MPNC 1714	Renaissance Ensemble
MPNC 1716	Contemporary Improvisation Ensemble: Walking between Worlds
MPNC 1721	Guitar Ensemble 1
MPNC 1731	Jazz Ensemble
MPNC 1741	Chamber Music Ensemble
MPNC 1742	Chamber Music Duo
MPNC 1751	Vocal Chamber Music
MPNC 1771	Improvisation and Composition Ensemble
MPNC 1781	Medieval Folk Roots Ensemble
MPNC 3642	Opera Ensemble Skills

Theatre

Website (<https://camd.northeastern.edu/theatre>)

Scott Edmiston, MFA

Professor of the Practice and Chair

180 Ryder Hall

617.373.2244

Antonio Ocampo-Guzman, Associate Professor and Major Mentor,
antonio@northeastern.edu

Jonathan Carr, Assistant Teaching Professor and Minor Mentor,
jo.carr@northeastern.edu

Darren Evans, Theatre Operations Specialist, d.evans@northeastern.edu

The Northeastern Department of Theatre is a community dedicated to creativity, collaboration, and excellence in the pursuit of innovative ways to see, to investigate, and to make theatre for a new generation. We offer students a transformative education by aligning performance and production with academic inquiry and professional experiential learning. Our curriculum embraces diverse techniques, philosophies, and measures of success.

Connecting classroom experiences to the stage, we produce a diverse season of plays and musicals, ranging from classical theatre to world premieres. Nearly 50 performances take place annually in the Studio Theatre, where students collaborate with faculty and professional guest artists to achieve the highest standard of professionalism. With more than 30 co-op partners around the globe, students can unite the career elements of a conservatory program with the comprehensive education of a liberal arts degree.

Our multidimensional students develop a unique understanding of creative entrepreneurship. They are actors, directors, designers, technicians, playwrights, stage managers, producers, and administrators.

With generosity, integrity, respect, and rigor, we explore theatre as a living art that engages with our global society and the moment in which we live.

Academic Progression Standards

Students must receive a minimum grade of 2.000 in major courses. The following courses are recommended to be taken by the end of the fourth semester (third semester for transfer students):

Code	Title	Hours
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4

Preapproved Template Program in Theatre

The Department of Theatre offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit our combined majors webpage (<https://camd.northeastern.edu/theatre/academics/undergraduate/flexible-curriculum>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the myNortheastern web portal (<http://my.northeastern.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

Programs

Bachelor of Arts (BA)

- Theatre (p. 202)
- Communication Studies and Theatre (p. 123)
- Cultural Anthropology and Theatre (p. 211)
- English and Theatre (p. 212)
- Media and Screen Studies and Theatre (p. 148)
- Theatre and Interaction Design (p. 102)

Bachelor of Science (BS)

- Theatre (p. 205)
- American Sign Language and Theatre (p. 208)
- Media and Screen Studies and Theatre (p. 149)
- Theatre and Interaction Design (p. 103)

Minors

- Theatre (p. 220)
- Dramatic Literature and the Human Experience (p. 220)
- Global Fashion Studies (p. 221)
- Musical Theatre (p. 199)
- Professional Presentation (p. 160)
- Theatrical Design (p. 222)

Theatre, BA

The Northeastern Department of Theatre is a community dedicated to creativity, collaboration, and excellence in the pursuit of innovative ways to see, to investigate, and to make theatre for a new generation. We offer

students a transformative theatre education by aligning performance and production with academic inquiry and professional experiential learning. Our multidimensional students develop a unique understanding of professionalism and entrepreneurship as the foundations of meaningful careers. We embrace diverse methods, philosophies, and measures of success. Through values of generosity, integrity, respect, and rigor, we explore theatre as a living art that engages with our global society and the moment in which we live.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Formal and Quantitative Reasoning (FQ), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Analyzing and Using Data (AD) must be met through general electives.

Theatre Major Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1000	Theatre at Northeastern	1
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
THTR 4100	Senior Career Seminar	1
Theatre Texts and Context		
Complete two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1

THTR 3700	Rehearsal and Production: The Art of Collaboration	4
THTR 4702	Capstone Rehearsal and Performance	4
Advanced Technique		
Complete one of the following:		4
Students concentrating in theatre performance should complete THTR 3300, THTR 3450 or THTR 3550.		
Students concentrating in production should complete THTR 3550		
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3450	Acting 3—Playing Shakespeare (Theatre Performance Concentration)	
THTR 3550	Directing for the Stage	

Electives

Complete the following electives or choose one of the concentrations below (p. 203).

Code	Title	Hours
Complete four of the following:		16
THTR 1215	Activism and Performance	
THTR 1260	Movement for the Actor	
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2335	Boston Theatre Experience	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Theatre Major Credit Requirement

Complete 60 semester hours in the major. The performance and production concentrations require 68 semester hours.

Program Requirement

131 total semester hours required

Theatre Performance Concentration

A minimum grade of C is required for all theatre courses in the performance concentration.

Code	Title	Hours
Performance		
THTR 1260	Movement for the Actor	4
THTR 2342	Acting 2	4
THTR 2600	Voice and Speech for the Actor	4
Electives		
Complete three of the following:		12
THTR 1215	Activism and Performance	
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2330	Playwriting	
THTR 2335	Boston Theatre Experience	
THTR 2340	Theatre and Society	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Theatre Production Concentration

A minimum grade of C is required for all theatre courses in the production concentration.

Code	Title	Hours
Design and Production		
Complete four of the following:		16
THTR 1230	The Evolution of Fashion and Costume	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
Electives		
Complete two of the following:		8
THTR 1215	Activism and Performance	

THTR 1235	Fashion and Costume Design in Film and Television
THTR 2300	Classics of Global Theatre
THTR 2310	History of Musical Theatre
THTR 2315	Rebels of Modern Drama
THTR 2330	Playwriting
THTR 2335	Boston Theatre Experience
THTR 2340	Theatre and Society
THTR 2342	Acting 2
THTR 2345	Acting for the Camera
THTR 2346	Viewpoints
THTR 2370	Lighting Design
THTR 2380	Costume Design
THTR 2385	Fashion Construction and Pattern Making
THTR 2400	Scenic Design
THTR 2500	Breaking the Glass Ceiling: Women in Theatre
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)
THTR 3300	Devised Theatre Project: Collaborative Performance
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

**Plan of Study
Theatre, BA**

SAMPLE FOUR YEARS, ONE CO-OP IN SPRING/SUMMER

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1000	1	THTR 1131	4	Foreign language core course	4	Vacation	0
THTR 1101	4	Theatre texts and context #1	4	Elective	4		
THTR 1120	4	Theatre elective #1	4				
ENGW 1111	4	MATH 1215	4				
Elective	4						
17		16		8		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1100	1	Co-op #1		Co-op #1	0	Vacation	0
THTR 2325	4						
THTR 1270	4						
Foreign language core course	4						
Elective	4						
EEAM 2000	1						
18		0		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 2000	1	Theatre elective #3	4	Elective	4	Vacation	0
Theatre texts and context #2	4	THTR 3700	4	Elective	4		
Theatre elective #2	4	Elective	4				
Foreign language core course	4	Elective	4				
Elective	4						
17		16		8		0	

Year 4

Fall	Hours	Spring	Hours
THTR 4100	1	Theatre advanced technique	4
Theatre elective #4	4	THTR 4702	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4		
17		16	

Total Hours: 133

Theatre, BA

SAMPLE FIVE YEARS, TWO CO-OPS IN SPRING/SUMMER

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1000	1	THTR 1131	4	Vacation	0	Vacation	0
THTR 1101	4	Theatre texts and context #1	4				
THTR 1120	4	Theatre elective #1	4				
ENGW 1111	4	MATH 1215	4				
Elective	4						
17		16		0		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1100	1	Co-op #1		Co-op #1	0	Vacation	0
THTR 1270	4						
THTR 2325	4						
Elective	4						
Elective	4						
EEAM 2000	1						
18		0		0		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 2000	1	Co-op #2		Co-op #2		Vacation	0
Theatre texts and context #2	4						

Theatre elective #2	4			
Elective	4			
Elective	4			
	17	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Theatre elective #3	4	Theatre elective #4	4	Vacation		Vacation	0
THTR 3700	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
	16		16		0		0

Year 5

Fall	Hours	Spring	Hours
THTR 4100	1	THTR 4702	4
Theatre advanced technique	4	Elective	4
Foreign language core course	4	Elective	4
Elective	4	Elective	4
Elective	4		
	17		16

Total Hours: 133

Theatre, BS

The Northeastern Department of Theatre is a community dedicated to creativity, collaboration, and excellence in the pursuit of innovative ways to see, to investigate, and to make theatre for a new generation. We offer students a transformative theatre education by aligning performance and production with academic inquiry and professional experiential learning. Our multidimensional students develop a unique understanding of professionalism and entrepreneurship as the foundations of meaningful careers. We embrace diverse methods, philosophies, and measures of success. Through values of generosity, integrity, respect, and rigor, we explore theatre as a living art that engages with our global society and the moment in which we live.

Program Requirements

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NUpath requirements Natural and Designed World (ND) and Analyzing and Using Data (AD) must be met through general electives.

Theatre Major Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1000	Theatre at Northeastern	1
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
THTR 4100	Senior Career Seminar (Senior Career Seminar)	1
Theatre Texts and Context		
Complete two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 3700	Rehearsal and Production: The Art of Collaboration	4
THTR 4702	Capstone Rehearsal and Performance	4
Advanced Technique		
Complete one of the following:		4
Students concentrating in theatre performance should complete THTR 3300, THTR 3450 or THTR 3550.		
Students concentrating in production should complete THTR 3550 or THTR 3600.		
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3450	Acting 3—Playing Shakespeare (Theatre Performance Concentration)	
THTR 3550	Directing for the Stage	

Electives

Complete the following electives or choose one of the concentrations below (p. 206).

Code	Title	Hours
Complete four of the following:		16
THTR 1215	Activism and Performance	
THTR 1260	Movement for the Actor	
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2335	Boston Theatre Experience	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Theatre Major Credit Requirement

Complete 60 semester hours in the major. The performance and production concentrations require 68 semester hours.

Program Requirement

131 total semester hours required

Theatre Performance Concentration

A minimum grade of C is required for all theatre courses in the performance concentration.

Code	Title	Hours
Performance		
THTR 1260	Movement for the Actor	4
THTR 2342	Acting 2	4
THTR 2600	Voice and Speech for the Actor	4
Electives		
Complete three of the following:		12
THTR 1215	Activism and Performance	
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	

THTR 2330	Playwriting
THTR 2335	Boston Theatre Experience
THTR 2340	Theatre and Society
THTR 2345	Acting for the Camera
THTR 2346	Viewpoints
THTR 2370	Lighting Design
THTR 2380	Costume Design
THTR 2385	Fashion Construction and Pattern Making
THTR 2400	Scenic Design
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)
THTR 3300	Devised Theatre Project: Collaborative Performance
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Theatre Production Concentration

A minimum grade of C is required for all theatre courses in the production concentration.

Code	Title	Hours
Design and Production		
Complete four of the following:		16
THTR 1230	The Evolution of Fashion and Costume	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
Electives		
Complete two of the following:		8
THTR 1215	Activism and Performance	
THTR 1235	Fashion and Costume Design in Film and Television	
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2330	Playwriting	
THTR 2335	Boston Theatre Experience	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2400	Scenic Design	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	

THTR 3300	Devised Theatre Project: Collaborative Performance
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Plan of Study

Theatre, BS

SAMPLE FOUR YEARS, ONE CO-OP IN SPRING/SUMMER

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1000	1	THTR 1131	4	Elective	4	Vacation	0
THTR 1101	4	Theatre texts and context #1	4	Elective	4		
THTR 1120	4	Theatre elective #1	4				
ENGW 1111	4	MATH 1215	4				
Elective	4						
		17			16		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1100	1	Co-op #1		Co-op #1	0	Vacation	0
THTR 2325	4						
THTR 1270	4						
Elective	4						
Elective	4						
EEAM 2000	1						
		18			0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 2000	1	Theatre elective #3	4	Elective	4	Vacation	0
Theatre texts and context #2	4	THTR 3700	4	Elective	4		
Theatre elective #2	4	Elective	4				
Elective	4	Elective	4				
Elective	4						
		17			16		

Year 4

Fall	Hours	Spring	Hours
THTR 4100	1	Theatre advanced technique	4
Theatre elective #4	4	THTR 4702	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4		
		17	16

Total Hours: 133

Theatre, BS

SAMPLE FIVE YEARS, TWO CO-OPS IN SPRING/SUMMER

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1000	1	THTR 1131	4	Vacation	0	Vacation	0
THTR 1101	4	Theatre texts and context #1	4				
THTR 1120	4	Theatre elective #1	4				
ENGW 1111	4	MATH 1215	4				
Elective	4						
		17			16		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1100	1	Co-op #1		Co-op #1	0	Vacation	0
THTR 1270	4						
THTR 2325	4						
Elective	4						
Elective	4						
EEAM 2000	1						
		18			0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 2000	1	Co-op #2		Co-op #2		Vacation	0
Theatre texts and context #2	4						
Theatre elective #2	4						
Elective	4						
Elective	4						
		17			0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Theatre elective #3	4	Theatre elective #4	4	Vacation		Vacation	0
THTR 3700	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16			16		

Year 5

Fall	Hours	Spring	Hours
THTR 4100	1	THTR 4702	4
Theatre advanced technique	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4		
		17	16

Total Hours: 133

American Sign Language and Theatre, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

This major is designed for students who want to combine an understanding of the American Deaf Community and its culture to the study and making of theatre, including performance, design, and production. It offers both classroom and experiential learning on the creative, social, and linguistic relationship between theatre and the American Deaf Community. Students may study acting, dramatic literature, and production design to develop the skills to be professional ASL/English interpreters and/or performers for theatrical productions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		
LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3550	Performance Interpreting—Interpreting for the Theatre	4

Interpreting

INTP 3500	The Interpreting Profession	2
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Theatre Requirements

Code	Title	Hours
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Theatre

A grade of C or higher is required for all theatre courses.

Foundational Stages

THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4

Theatre Texts and Context

Choose one of the following:		
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	

Making Theatre

THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1

Intermediate or Advanced Technique

Choose two of the following:		
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2600	Voice and Speech for the Actor	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirement

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
THTR 4702	Capstone Rehearsal and Performance	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses
Minimum 2.500 overall GPA required

Combined-Major Credit/Grade Requirement

Complete 88 semester hours in the major. A minimum grade of C is required for all theatre courses.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	THTR 1120	4				
THTR 1101	4	MATH 1215	4				
ENGW 1111	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0
LING 1150	4	DEAF 2700	4				
DEAF 2500	4	THTR 1131	4				
THTR 1270	4	Elective	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTP 4560	4	THTR 1260	4	Vacation	0	Vacation	0
THTR 2325	4	INTP 3550	4				
THTR 3700	4	THTR 2300	4				
INTP 3510	4	AMSL 3102	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
THTR 1100	1	Elective	4
ENGW 3315	4	Elective	4
THTR 3550	4	INTP 4940	4
Elective	4	THTR 2000	1
Elective	4	Elective	4
	17		17

Total Hours: 130

Communication Studies and Theatre, BA

The Department of Communication Studies and the Department of Sociology offer an interdisciplinary combined major in communication studies and theatre. The combined major integrates the study of communication skills and processes with the study of theater history, playwriting, acting, and directing, as well as costume design, lighting, and scenery.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Creative Expression/Innovation (EI), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Difference and Diversity (DD) may be met through electives in the major.

Communication Studies Requirements

Code	Title	Hours
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Communication Studies Common Requirements

COMM 1000	Communication Studies at Northeastern	1
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course

Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course

Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive Courses

Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	

COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives
 Complete three COMM courses. 12

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4

Theatre Texts and Context		
Choose one of the following: 4		
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	

Intermediate or Advanced Technique		
Choose two of the following: 8		
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design (THTR 3200 Queer Theatre)	
THTR 2400	Scenic Design	
THTR 3200	Queer Theatre and Performance	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4

Integrative Requirements

Code	Title	Hours
Theatre Capstone		
THTR 4702	Capstone Rehearsal and Performance	4

Communication Studies Integrative Course

Complete one of the following: 4	
COMM 4102	Health Communication Campaigns
COMM 4530	Communication and Quality of Life

Communication Studies Major Grade Requirement

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

130 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
COMM 1000 or THTR 1000	1	COMM 1112 or 2301	4	Communication studies foundation course	4	Vacation	4		
COMM 1101	4	THTR 1131	4	Communication studies elective	4				
THTR 1101	4	Foreign language course	4						
THTR 1120	4	ENGW 1111	4						
Foreign language elective	4								
		17		16		8		0	

Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Communication studies cluster course	4	Co-op	4	Co-op	4	Vacation	4		
Communication studies elective	4								
THTR 2325	4								
EEAM 2000	1								
Theatre text and context elective	4								
		17		0		0		0	

Year 3									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Intermediate or advanced THTR technique course	4	Co-op	4	Co-op	4	Communication studies writing-intensive	4		
Foreign language culture course	4								
Communication studies elective	4								
ENGW 3314 or 3315	4								

THTR 1270	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op		Co-op		Vacation	
Intermediate or advanced technique elective	4						
THTR 1100	1						
Elective	4						
Elective	4						
	17		0		0		0
Year 5							
Fall	Hours	Spring	Hours				
THTR 4702	4	Elective	4				
Communication studies integrative course	4	Elective	4				
Elective	4	Elective	4				
Elective	4	THTR 2000	1				
		Elective	4				
	16		17				

Total Hours: 132

Cultural Anthropology and Theatre, BA

This major is designed for students who want to combine a knowledge of the art of theatre, including performance, design, and production, with sociocultural theories and conceptual frameworks for understanding human behavior. It offers both classroom and experiential learning in the practice of making theatre and performance theories with cross-cultural approaches. Successful students develop an understanding of theatre's impact on past and present cultures, as well as a deeper awareness of the world in which they live.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Anthropology Requirements

Code	Title	Hours
Foundation Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
Advanced Area Courses		
Complete two of the following:		
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete six courses in the following range. Two study-abroad courses may count toward this requirement with prior permission from the department:

ANTH 2300 to ANTH 4999

Social Science Electives

Complete three social science courses from the following subject areas:

AFRS, AFAM, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, PSYC, SOCL

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Intermediate or Advanced Technique		
Complete two of the following:		
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	

THTR 2380	Costume Design
THTR 2400	Scenic Design
THTR 2500	Breaking the Glass Ceiling: Women in Theatre
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Integrative Requirements

Code	Title	Hours
Integrative Courses		
THTR 4702	Capstone Rehearsal and Performance	4
ANTH 2300	Reading Culture through Ethnography	4

Cultural Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

English and Theatre, BA

The Department of English and the Department of Theatre offer an interdisciplinary combined major that integrates performance, design, production, and dramatic literature with literary studies, digital humanities, and creative writing. This combined major offers both classroom and experiential learning in making theatre, playwriting, and dramaturgy with the study of the diverse historical, cultural, and aesthetic contexts of diverse English and American literatures. Students develop the capacity for interpreting a variety of texts through performance and writing to engage diverse audiences.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	

ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science

ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children’s Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer’s Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1000 or ENGL 1000	Theatre at Northeastern English at Northeastern	1
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following: 4		
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Intermediate or Advanced Technique		
Complete two of the following: 8		

THTR 2310	History of Musical Theatre
THTR 2330	Playwriting
THTR 2342	Acting 2
THTR 2345	Acting for the Camera
THTR 2346	Viewpoints
THTR 2370	Lighting Design
THTR 2380	Costume Design
THTR 2400	Scenic Design
THTR 3200	Queer Theatre and Performance
THTR 3300	Devised Theatre Project: Collaborative Performance
THTR 3400	Designing Combat for the Stage
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Integrative Requirements

Courses used in the integrative requirements cannot double-count in other areas of the major.

Code	Title	Hours
Integrative Courses		
ENGL 1600	Introduction to Shakespeare	4
THTR 2315	Rebels of Modern Drama	4
or THTR 2320	America Onstage: Dramatizing the Dream	

English and Theatre Major Credit Requirement

90 semester hours required in the major

Program Requirement

128 total semester hours required

Media and Screen Studies and Theatre, BA

This major is designed for students who want to combine a knowledge of the art of theatre with the theories and conceptual frameworks of media and film studies. It offers both classroom and experiential learning in areas of acting, directing, writing, and design with related studies in screenwriting, media technology, and media production. Students develop a personalized technique for the practices of making theatre, film (documentary and fiction), and television as engaged citizens and creative artists.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirement Natural and Designed World (ND) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Studies		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Studies Electives		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
CINE 3500	Film Theory	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	

MSCR 4992	Directed Study
MSCR 4993	Independent Study

Theatre Requirements

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4

Theatre Texts and Context		
Complete one of the following: 4		
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	

Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1

Intermediate or Advanced Technique		
Complete two of the following: 8		
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirement

Code	Title	Hours
Media and Screen Studies Capstone		
MSCR 4623	Theories of Media and Culture	4

Theatre Capstone

THTR 4702	Capstone Rehearsal and Performance	4
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Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

130 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
THTR 1101	4	THTR 1131	4				
THTR 1120	4	THTR 1270	4				
ENGW 1111	4						
		17		16		8	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Foreign language core course	4
Advanced MSCR elective	4					Elective	4
THTR 2325	4						
THTR texts and context elective	4						
EEAM 2000	1						
THTR 1100	1						
		18		0		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	0
Advanced MSCR elective	4						
Intermediate or advanced technique elective	4						
Foreign language core course	4						
THTR 2000	1						
		17		0		0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	MSCR 4623	4	Vacation	4	Vacation	0

Intermediate or advanced technique elective	4	Elective	4		
Foreign language core course	4	Elective	4		
Elective	4	Elective	4		
	16		16	0	0

Year 5

Fall	Hours
THTR 4702	4
Elective	4
Elective	4
Elective	4
	16

Total Hours: 132

Media and Screen Studies and Theatre, BS

This major is designed for students who want to combine a knowledge of the art of theatre with the theories and conceptual frameworks of media and film studies. It offers both classroom and experiential learning in areas of acting, directing, writing, and design with related studies in screenwriting, media technology, and media production. Students develop a personalized technique for the practices of making theatre, film (documentary and fiction), and television as engaged citizens and creative artists.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirement Natural and Designed World (ND) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1

Introduction to Media Studies

MSCR 1220	Media, Culture, and Society	4
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Introduction to Screen Studies

MSCR 2220	Understanding Media and Film	4
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Advanced Theory

MSCR 4623	Theories of Media and Culture	4
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Media and Screen Studies Electives

Complete four of the following:		16
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CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	

Advanced Media and Screen Electives

Complete two of the following:		8
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CINE 3500	Film Theory	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	

Theatre Requirements

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	

Making Theatre

THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
Intermediate or Advanced Technique		
Complete two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3200	Queer Theatre and Performance (Queer Theatre - to be added)	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage (Designing Combat for the Stage - to be added)	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirement

Code	Title	Hours
Media and Screen Studies Capstone		
MSCR 4623	Theories of Media and Culture	4
Theatre Capstone		
THTR 4702	Capstone Rehearsal and Performance	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

130 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
THTR 1101	4	THTR 1131	4				
THTR 1120	4	THTR 1270	4				
ENGW 1111	4						
		17			16		
					8		
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
Advanced MSCR elective	4					Elective	4
THTR 2325	4						
THTR texts and context elective	4						
THTR 1100	1						
EEAM 2000	1						
		18			0	0	
						8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	
Advanced MSCR elective	4						
Intermediate or advanced technique elective	4						
Elective	4						
THTR 2000	1						
		17			0	0	
						0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	MSCR 4623	4	Vacation		Vacation	
Intermediate or advanced technique elective	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16			16	0	
						0	

Year 5

Fall	Hours	
THTR 4702	4	
Elective	4	
Elective	4	
Elective	4	
		16

Total Hours: 132

Theatre and Interaction Design, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Theatre Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Major Electives		
Complete one from the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Intermediate/Advanced Electives		
Complete two from the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2300	Classics of Global Theatre	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 2600	Voice and Speech for the Actor	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Interaction Design Requirements

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1	4
ARTG 2251	Type Tools	1
ARTG 2260	Programming Basics	4
ARTG 2400	Interaction Design 1: Responsive	4
ARTG 2401	Interaction Design Tools	1
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
ARTG 3700	Interaction Design 2: Mobile	4
Design Project		
Complete one of the following:		4
ARTG 4550	Design Degree Project 1	
ARTG 4700	Interaction Team Degree Project 1	
Major Electives		
<i>Art + Design History</i>		
Complete two of the following:		8
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2215	History of Graphic Design	
<i>Art + Design Electives</i>		
Complete one of the following:		4
ARTD 2360	Photo Basics	
ARTD 2380	Video Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing	
ARTF 2220	4D Fundamentals: Sequence and Drawing	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3460	Identity and Brand Design	
ARTG 3351	Time-Based Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	
Integrative Requirement		
THTR 4702	Capstone Rehearsal and Performance	4
ARTG 4551	Design Degree Project 2	4
or ARTG 4701	Interaction Team Degree Project 2	

Theatre and Interaction Design Combined-Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

128 total semester hours required

Theatre and Interaction Design, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Theatre Requirements

A minimum grade of C is required for all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Major Electives		
Complete one from the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Intermediate/Advanced Electives		
Complete two from the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	

THTR 2300	Classics of Global Theatre
THTR 2370	Lighting Design
THTR 2380	Costume Design
THTR 2400	Scenic Design
THTR 2500	Breaking the Glass Ceiling: Women in Theatre
THTR 2600	Voice and Speech for the Actor
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Interaction Design Requirements

Code	Title	Hours
Art + Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing	4
ARTF 2223	5D Fundamentals: Experience and Drawing	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1	4
ARTG 2251	Type Tools	1
ARTG 2260	Programming Basics	4
ARTG 2400	Interaction Design 1: Responsive	4
ARTG 2401	Interaction Design Tools	1
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
ARTG 3700	Interaction Design 2: Mobile	4
Design Project		
Complete one of the following:		4
ARTG 4550	Design Degree Project 1	
ARTG 4700	Interaction Team Degree Project 1	
Major Electives		
<i>Art + Design History</i>		
Complete two of the following:		8
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2215	History of Graphic Design	
<i>Art + Design Electives</i>		
Complete one of the following:		4
ARTD 2360	Photo Basics	
ARTD 2380	Video Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing	
ARTF 2220	4D Fundamentals: Sequence and Drawing	
ARTG 2252	Graphic Design 1	
ARTG 3250	Physical Computing	
ARTG 3460	Identity and Brand Design	
ARTG 3351	Time-Based Design	
ARTG 4552	Information Design 2	

ARTG 4553 Environmental Information Design

ARTG 4554 Typography 3

Integrative Requirement

Code	Title	Hours
THTR 4702	Capstone Rehearsal and Performance	4
ARTG 4551 or ARTG 4701	Design Degree Project 2 Interaction Team Degree Project 2	4

Theatre and Interaction Design Combined-Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

128 total semester hours required

Theatre, Minor

Theatre minors are important and fully engaged members of our theatre department and community. Minors may be interested in becoming professional theatre artists or looking for creative inspiration or to enhance their communication skills. No two student experiences are alike, and you can choose the path that matches your theatre interests and ambitions.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Note: No student may receive a theatre minor as a result of external transfer credit only.

Required Course

Code	Title	Hours
THTR 1101	Introduction to Theatre	4

Foundational Courses

Code	Title	Hours
Complete one of the following:		4
THTR 1130	Introduction to Acting	
THTR 1131	Technical Theatre 1	
THTR 1270	Introduction to Theatrical Design	
THTR 2325	From Script to Stage	

Electives

Code	Title	Hours
Choose two courses from the following options (prerequisites may apply):		8

THTR 1125 Improvisation

THTR 1130 Introduction to Acting

THTR 1131 Technical Theatre 1

THTR 1135 Introduction to Acting Abroad

THTR 1160 The Professional Voice

THTR 1165 The Professional Voice Abroad

THTR 1215 Activism and Performance

THTR 1270 Introduction to Theatrical Design

THTR 2300 Classics of Global Theatre

THTR 2310 History of Musical Theatre

THTR 2315 Rebels of Modern Drama

THTR 2320 America Onstage: Dramatizing the Dream

THTR 2325 From Script to Stage

THTR 2330 Playwriting

THTR 2335 Boston Theatre Experience

THTR 2340 Theatre and Society

THTR 2342 Acting 2

THTR 2345 Acting for the Camera

THTR 2346 Viewpoints

THTR 2370 Lighting Design

THTR 2380 Costume Design

THTR 2400 Scenic Design

THTR 2500 Breaking the Glass Ceiling: Women in Theatre

THTR 2600 Voice and Speech for the Actor

THTR 3300 Devised Theatre Project: Collaborative Performance

THTR 3450 Acting 3—Playing Shakespeare

THTR 3550 Directing for the Stage

THTR 3570 Musical Theatre Performance

Making Theatre

Code	Title	Hours
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Participate in a theatre department production:

THTR 1100	Production Experience 1	1
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NOTE: If cast in a substantial role, THTR 3700 Rehearsal and Production (4 semester hours) can be substituted for THTR 1100.

GPA Requirement

2.000 GPA required in the minor

Dramatic Literature and the Human Experience, Minor

This minor is designed for students with an interest in experiencing theatre as ideas, connecting theatre and creative writing, and understanding human behavior and psychology as captured by the written word. Students can select a personalized path of study to explore a range of diverse and innovative plays, playwrights, dramatic theories, forms, and movements spanning from Ancient Greece to today.

The dramatic literature and human experience minor combines courses from the Department of Theatre with additional choices from the English, communication studies, and media and screen studies departments.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
THTR 1101	Introduction to Theatre	4

Electives

Code	Title	Hours
Choose three from the following:		12

Note: Two of the three electives must be selected within the theatre curriculum.

CINE 3389 Screenwriting

COMM 1511	Communication and Storytelling
ENGL 1600	Introduction to Shakespeare
THTR 2300	Classics of Global Theatre
THTR 2315	Rebels of Modern Drama
THTR 2320	America Onstage: Dramatizing the Dream
THTR 2325	From Script to Stage
THTR 2330	Playwriting
THTR 2335	Boston Theatre Experience
THTR 2340	Theatre and Society
THTR 2500	Breaking the Glass Ceiling: Women in Theatre
THTR 3200	Queer Theatre and Performance

Note: For theatre majors, only Introduction to Theatre (THTR 1101) may be double counted within the existing theatre requirements. They must take three additional courses to complete the minor (for a total of six dramatic literature courses).

GPA Requirement

2.000 GPA required in the minor

Global Fashion Studies, Minor

This program of study has grown from steadily increasing student enthusiasm in fashion history and costume design courses offered by the Department of Theatre. The primary focus of this new minor is on the context, culture, and practices of the fashion industry. This minor will appeal to students whose interests lie in fashion marketing, fashion journalism, fashion photography, and fashion and textile technology.

As a prominent global industry, fashion offers employment opportunities in a wide variety of areas. This new minor allows Northeastern students to identify, analyze, demonstrate, and communicate how the evolving and highly competitive fashion industry functions artistically, socially, historically, economically, ethically, and culturally in a global market. Courses in this minor include opportunities for design thinking and collaborative maker activities as well as the development of innovation and entrepreneurship.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
Complete one of the following:		4
THTR 1236	Introduction to Global Fashion Studies: History, Theory, and Contemporary Practice	
THTR 1237	Introduction to Global Fashion Studies Abroad: History, Theory, and Contemporary Practice	

Electives

Code	Title	Hours
Complete two of the following:		8
ARTE 4901	Special Topics in Art and Design Studio	
THTR 1230	The Evolution of Fashion and Costume	
THTR 1233	19th- and 20th-Century Fashion in Europe	

THTR 1235	Fashion and Costume Design in Film and Television	
THTR 1240	Fashion Industry and Trend Forecasting in Europe	
THTR 2242	Fashion Retailing	
THTR 2385	Fashion Construction and Pattern Making	
THTR 2550	Mass Media and the Fashion Industry in Europe	
THTR 3350	Fashion Marketing and Merchandising in Europe	
Complete one of the following:		4
ARTD 2350	Photo Basics for Nonmajors	
ARTG 1250	Design Process Context and Systems	
ARTG 2260	Programming Basics	
COMM 3445	Public Relations Principles	
COMM 3451	Advertising Practices	
JRNL 3425	Public Relations Principles	
JRNL 5310	Photojournalism	
THTR 2380	Costume Design	

GPA Requirement

2.000 GPA required in the minor

Musical Theatre, Minor

A minor in musical theatre gives students a practical foundation in all aspects of the theatre including performance, music, design, and the history of the theatre.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
THTR 1130	Introduction to Acting	4
THTR 4882	Special Topics: Theatre Performance (Singing for Musical Theatre)	4

Making Musical Theatre

Code	Title	Hours
Choose one of the following:		1
MUSC 1901	Music Lessons 1	
THTR 1100	Production Experience 1	

Electives

Code	Title	Hours
Choose two of the following:		8
THTR 1101	Introduction to Theatre	
MUSC 2210	Introduction to Songwriting	
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 3570	Musical Theatre Performance	

GPA Requirement

2.000 GPA required in the minor

Professional Presentation, Minor

Whether you are speaking at a meeting, engaging an audience, pitching a new idea, or energizing your team, effective presentation skills are essential to professional success. This dynamic, interdisciplinary minor is designed to help you become a more confident, creative, and compelling communicator. Uniting the acting training of theatre with practical techniques of communications studies, develop an individualized course of study that will empower your voice and speech, cultivate your onstage persona, and develop high-impact presentation skills to enhance your career prospects.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Presentation Requirement

Code	Title	Hours
Complete two of the following: 8		
COMM 1112	Public Speaking	
COMM 1113	Business and Professional Speaking	
COMM 1210	Persuasion and Rhetoric	
COMM 1511	Communication and Storytelling	

Performance Requirement

Code	Title	Hours
Complete two of the following: 8		
THTR 1125	Improvisation	
THTR 1130	Introduction to Acting	
THTR 1135	Introduction to Acting Abroad	
THTR 1160	The Professional Voice	
THTR 1165	The Professional Voice Abroad	
THTR 2345	Acting for the Camera	

GPA Requirement

2.000 GPA required in minor

Theatrical Design, Minor

This minor is intended for students with an interest in design as the collaborative art of transforming ideas into images that support live performance; design as an expression of human experience; design as a method of inquiry and problem solving. It encourages interdisciplinary learning by connecting the study of theatre with studio art, visual communication, design thinking, spatial design, and visual storytelling.

The theatrical design minor combines courses from the Department of Theatre with additional choices from the Department of Art + Design, the Department of Music, and the Department of Architecture.

Minor Requirements

Complete all courses listed below unless otherwise indicated.

Foundational Requirements

Code	Title	Hours
THTR 1100	Production Experience 1	1
THTR 1270	Introduction to Theatrical Design	4

Design Area

Code	Title	Hours
Complete two of the following: 8		
THTR 1131	Technical Theatre 1	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2600	Voice and Speech for the Actor	
MUST 2320	Sound Design	

Interdisciplinary Elective

Code	Title	Hours
Complete one of the following: 4		
ARTG 1250	Design Process Context and Systems	
ARCH 1450	Understanding Design	
ARTG 3462	Experience Design 1	
THTR 1131	Technical Theatre 1	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2600	Voice and Speech for the Actor	
MUST 2320	Sound Design	

GPA Requirement

2.000 GPA required in the minor

D'Amore-McKim School of Business

Website (<http://www.damore-mckim.neu.edu>)

Raj Echambadi, PhD, Dunton Family Dean

Jeffery A. Born, PhD, Associate Dean of Undergraduate Programs

Kate E. Klepper, MBA, Associate Dean of Graduate Programs

Emery A. Trahan, PhD, Senior Associate Dean of Faculty and Research

Undergraduate Office

250 Dodge Hall

617.373.3270

617.373.4804 (fax)

Cynthia Elcock, *Academic Assistant*, c.elcock@northeastern.edu

Modern business faces many opportunities and challenges due to increasing globalization of economies; political change; and the effects of foreign policy, technological advances, regulatory policies, and economic policies. The result is increased demand for highly educated individuals equipped to analyze and address this changing environment.

Programs in the D'Amore-McKim School of Business are designed for students who are preparing to take on managerial responsibility or starting their own companies. These programs seek to help students develop the ability to recognize and solve business and organizational problems and understand the role of business in the community, the nation, and the world. The school strives to assist students in becoming global citizens, designing innovative solutions, and developing their own professional paths and passions.

The school offers Bachelor of Science degrees in:

- Business Administration
- International Business
- Combined Majors—see Combined Majors section

For each degree program students must choose one of the concentrations listed below:

- Accounting
- Entrepreneurship and Innovation
- Finance
- Management
- Management Information Systems
- Marketing
- Supply Chain Management

The business curriculum is enhanced by courses in the sciences, humanities, and social sciences. In addition to their academic courses, all students are required to complete a cooperative education plan.

Co-op provides a learning experience beyond the classroom. Textbook examples come to life in real-world business settings where business theories are applied to actual business problems. In turn, these experiences serve to stimulate inquiry and discussion back in the classroom. This interaction between college studies and cooperative education sets the stage for a lifetime of learning.

The undergraduate program of the D'Amore-McKim School of Business meets the standards of the American Assembly of Collegiate Schools of

Business for faculty and student quality, curriculum design, and overall university support.

After graduation, students may obtain jobs in all aspects of business, both domestically and internationally, as well as in nonprofits and government.

Academic Progression Standards

In addition to meeting the university progression standards, students must achieve a 2.000 GPA in business courses.

Freshmen must complete at least 32 semester hours (SH) in order to progress to sophomore status. Freshmen who earn fewer than 32 SH must make up the difference prior to graduation. Students beyond the freshman year must complete at least 16 SH each in-school (not on co-op) full semester and 8 SH each in-school summer half semester in order to progress to the next class standing.

Students who do not meet academic progression standards will be placed on academic probation and may be subject to dismissal from the university.

Pass/Fail Option

D'Amore-McKim School of Business students may opt to take courses on a pass/fail basis in accordance with university policy but should be aware that this policy applies to nonbusiness courses that will count as open electives only. Business courses may not be taken pass/fail under any circumstance.

Taking Courses While on Co-op

It is D'Amore-McKim School of Business policy that, with permission of their academic advisor, co-op coordinator, and employer, students may take a maximum of one class while on co-op during the fall, spring, or summer term.

External Transfer to the D'Amore-McKim School of Business

External transfer students are accepted from other academic institutions during the fall and spring terms. Applications and accompanying materials are submitted directly to the Admissions Office.

The D'Amore-McKim School of Business at Northeastern University is accredited by the Association for the Advancement of Collegiate Schools of Business (AACSB) and as such complies with the following regulations governing the transferring of credit:

COURSES FROM AN AACSB-ACCREDITED INSTITUTION

Students may transfer a maximum of 80 SH of credit. A combination of 60 SH of nonbusiness courses and/or 28 SH of business courses will be accepted; 64 SH may be applied as credits toward the minimum 128 SH required for degree conferral.

COURSES FROM A NON-AACSB-ACCREDITED INSTITUTION

Students may transfer a maximum of 60 SH of credit. A combination of 52 SH of nonbusiness courses and/or 20 SH of business courses will be accepted.

Some courses are not eligible for transfer. Check with the Office of Undergraduate Admissions for more details.

Graduation Requirements

The school reserves the right to amend programs, courses, and degree requirements to fulfill its educational responsibility to respond to relevant changes in the field.

Bachelor of Science degree candidates must complete all prescribed work of the curriculum in which they seek to qualify, currently 128 SH. The degree not only represents the formal completion of selected courses but also indicates professional study in the major or concentration. A GPA of 2.000 and a C average in all business courses are required for graduation.

Bachelor of Science in Business Administration, BSBA

The Bachelor of Science in Business Administration program integrates the theory and practice of management through active learning, problem-driven research, corporate partnerships, and experiential assignments. As part of the degree program, all students are expected to participate in the co-op program, where they participate in paid work placements related to their field of study. The BS degree can be accomplished using the four-year co-op plan or with the five-year co-op plan.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

NUPath requirements Differences and Diversity (DD), Creative Expression and Innovation (EI), and Natural and Designed World (ND) are not explicitly satisfied by required courses in the business curriculum at this time. Students are responsible for satisfying these requirements, and if these are not fulfilled in required major courses, they should use general electives to do so.

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Management Information Systems		
MISM 2301	Management Information Systems	4
Operations Management and Supply Chain Management		
SCHM 2301	Supply Chain and Operations Management	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4

Strategy in Action		
STRT 4501	Strategy in Action	4
or STRT 4516	External Case Competition Challenge	
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4
Statistics		
MGSC 2301	Business Statistics	4

Concentration

Complete the required concentration appropriate to your program. One concentration is required. A second concentration is optional.

- Accounting (p. 259)
- Business/Interdisciplinary (p. 259) (second concentration only)
- Entrepreneurship and Innovation (p. 259)
- Finance (p. 260)
- Management (p. 261)
- Management Information Systems (p. 261)
- Marketing (p. 262)
- Supply Chain Management (p. 262)

Supporting Courses

Code	Title	Hours
Mathematics		
Complete one of the following:		4
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
MATH 1242	Calculus 2	
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1252	Calculus and Differential Equations for Biology 2	
MATH 1340	Intensive Calculus for Engineers	
MATH 1341	Calculus 1 for Science and Engineering	
MATH 1342	Calculus 2 for Science and Engineering	
Macroeconomics and Microeconomics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4

Business Cooperative Education Requirement

Complete two six-month co-op experiences.

Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Note: Plan of study will vary based upon student's academic program. The four-year plan of study will require summer courses throughout the student's academic career. Individual study plans will be created with an academic advisor.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BUSN 1101	4	Business core ¹	4	Vacation	0	Vacation	0
BUSN 1102	1	Business core ¹	4				
ENGW 1111, ECON 1116, or MATH 1231 (FQ)	4	ENGW 1111, ECON 1116, or MATH 1231 (FQ)	4				
Take two:	8	Take one:	4				
MGSC 2301 (AD)		MGSC 2301 (AD)					
ACCT 1201		ACCT 1201					
INTB 1203 (IC and ER)		INTB 1203 (IC and ER)					
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Concentration course	4	Concentration course	4	Vacation	0	Co-op	0
Business core ¹	4	Business core ¹	4				
Business core ¹	4	Elective ²	4				
ECON 1116, 1115, or MATH 1231 (FQ)	4	ECON 1116, 1115, or MATH 1231 (FQ)	4				
BUSN 1100	1	BUSN 1103	1				
	17		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Concentration course	4	Elective	4	Co-op	0
		ENGW 3304	4	Elective	4		
		ORGB 3201	4				
		Elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Concentration course ³	4	Elective	4	Co-op	0
		Elective ⁴	4	Elective	4		
		Elective ⁴	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	STRT 4501 (WI, CE, and SI)	4
		Elective ⁴	4
		Elective ⁴	4

Elective	Hours
	4
	0
	16

Total Hours: 131

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BUSN 1101	4	Business core ¹	4	Vacation	0	Vacation	0
BUSN 1102	1	Business core ¹	4				
ENGW 1111, ECON 1116, or MATH 1231 (FQ)	4	ENGW 1111, ECON 1116, or MATH 1231 (FQ)	4				
Take two:	8	Take one:	4				
MGSC 2301 (AD)		MGSC 2301 (AD)					
ACCT 1201		ACCT 1201					
INTB 1203 (IC and ER)		INTB 1203 (IC and ER)					
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Concentration course	4	Co-op	4	Co-op	4	Elective ²	4
Business core ¹	4					Elective	4
Business core ¹	4						
ECON 1116, 1115, or MATH 1231 (FQ)	4						
BUSN 1103	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Concentration course	4	Co-op	4	Co-op	4	Elective	4
Business core ¹	4					Elective	4
ORGB 3201	4						
ECON 1116, 1115, or MATH 1231 (FQ)	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Concentration course ³	4	Co-op	4	Co-op	4	Vacation	4
ENGW 3304	4						
Elective ⁴	4						

Elective ⁴	4			
	16	0	0	0
Year 5				
Fall	Hours	Spring	Hours	
Concentration course	4	STRT 4501 (WI, CE, and SI)	4	
Elective ⁴	4	Elective	4	
Elective ⁴	4	Elective	4	
Elective	4	Elective	4	
	16		16	

Total Hours: 131

¹ Business core courses as indicated in the sample study plan include Managerial Accounting (ACCT 2301), Financial Management (FINA 2201), Introduction to Marketing (MKTG 2201), Management Information Systems (MISM 2301), and Supply Chain and Operations Management (SCHM 2301).

² Students are strongly encouraged to complete Innovation! (ENTR 2301) to fulfill their NUpath EI requirement.

³ One concentration course will fulfill WI.

⁴ Electives may be used to complete a secondary business concentration. In addition, some electives shown will be fulfilled by completing NUpath courses not explicitly completed by following major curriculum.

Bachelor of Science in International Business, BSIB

The BSIB program allows students the opportunity to create their own path to experience the challenges of an international assignment that any manager may encounter during his or her career. You will have the chance to take courses in the principal fields of business and choose among our seven business concentrations. Students may choose their destination for international immersion from a wide variety of locations. Whether you do a four- or five-year program with one, two, or three co-ops, a yearlong immersion, customized study and co-op or study semesters, dual or single degree, the choice is yours.

Available Opportunities

A **yearlong immersion**, which includes a full semester of study at one of the traditional BSIB partners with a six-month co-op in the host country. Course work and co-op are completed in one consecutive year at the same location with business-based curricula and dual-degree opportunities. Work may be completed in either English or the language of the host country.

A **customized study and co-op program** during either the spring or fall terms at either a BSIB partner or via the Global Experience Office. This version of the program will allow for study semesters and co-op to be completed in separate academic years and in different locations. A wide variety of subjects are offered; not always business focused. This opportunity requires an independent international co-op search.

Custom study semesters are also available between a BSIB partner school or a program sponsored by the Global Experience Office. The study semesters can be completed in separate academic years and in different locations. Course work is generally taught in English and there are a wide variety of subjects offered.

Students also have the dual-degree option, which allows them to receive both the BSIB degree from Northeastern and an equivalent undergraduate

degree from some of the partner schools. This dual-degree path is an intensive program requiring strong commitment.

With the flexibility of the BSIB, students are able to combine their undergraduate program with the Master of Science in International Management PlusOne program, the Master of Finance, or the Master of Accounting.

In conjunction with their academic advisor, students will determine an individual action plan to meet their needs. Students take the degree's required courses in international business administration and choose a concentration from other business areas such as accounting, entrepreneurship, finance, marketing, management, information management, and supply chain management.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Differences and Diversity (DD), Natural and Designed World (ND), and Formal and Quantitative Reasoning (FQ) are not explicitly satisfied by required courses in the business curriculum at this time. Students are responsible for satisfying these requirements, and if these are not fulfilled in required major courses, they should use general electives to do so.

Business Core

Code	Title	Hours
ACCT 1202	Financial Accounting in a Global Context	4
ENTR 2301	Innovation!	4
FINA 2202	Financial Management in a Global Context	4
ORGB 3201	Organizational Behavior	4
MGSC 2301	Business Statistics	4
MKTG 2202	Introduction to Marketing in a Global Context	4

International Business Requirements

Code	Title	Hours
INTB 1202	Becoming a Global Manager	4
INTB 2202	Analyzing the Global Business Environment	4
INTB 3202	Managing the International Assignment	4
INTB 4202	Executing Global Strategy	4

Language Proficiency or Minor Requirement

Students must test to a level of B1 proficiency in the language of their destination to qualify for their expatriate year.

Note: Students who opt for the expatriate year in England or Ireland must complete a globally focused general minor to earn the BSIB degree. A list of qualifying minors may be found on the overview (p. 226) page.

Concentration

Complete one of the following concentrations. A second concentration is optional. Certain concentrations require additional prerequisites. Please consult your academic advisor to ensure you have met these requirements.

- Accounting (p. 259)
- Business/Interdisciplinary (p. 259) (second concentration only)
- Entrepreneurship and Innovation (p. 259)
- Finance (p. 260)
- Management (p. 261)
- Management Information Systems (p. 261)
- Marketing (p. 262)
- Supply Chain Management (p. 262)

General Education

Code	Title	Hours
ECON 1116	Principles of Microeconomics	4
ENGW 1111	First-Year Writing	4
ENGW 3304	Advanced Writing in the Business Administration Professions	4
BUSN 1100	Introduction to Planning for Business Co-op and Careers	1
BUSN 1102	Personal Skill Development for Business	1
BUSN 1103	Professional Development for Business Co-op	1

Business Cooperative Education

Complete two six-month co-op experiences.

Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Five-Year Program: Year 3 Abroad with 3 Co-ops

Note: Plan of study will vary based upon student's academic program. Individual study plans will be created with academic advisor.

- Additional courses may be required in place of open electives. Electives may be moved or used to fulfill language classes.
- This plan of study will not work for the United Kingdom or Spain. Consult advisor for study plan example. Finance concentration requires Managerial Accounting in a Global Context (ACCT 2302) and Principles of Macroeconomics (ECON 1115) to fulfill prerequisites. Accounting concentration requires Managerial Accounting in a Global Context (ACCT 2302) as a prerequisite. Supply chain management requires Supply Chain and Operations Management (SCHM 2301) as prerequisite. Management information systems requires Management Information Systems (MISM 2301) as a prerequisite.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTB 1202	4	MKTG 2202	4	Elective	4	Co-op	0
MGSC 2301	4	FINA 2202	4	Concentration course	4		
ACCT 1202	4	ENGW 1111	4				
ECON 1116 or ENTR 2301	4	ECON 1116 or ENTR 2301	4				
BUSN 1102	1	BUSN 1103	1				
BUSN 1100	1						
		18		17		8	
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		INTB 2202	4	Elective	4	Vacation	0
		Concentration course	4	Concentration course	4		
		Elective	4				
		Elective	4				
		0		16		8	
						0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Expatriate year abroad—school and co-op	0	Co-op abroad	0	Co-op abroad	0	Elective	4
Concentration course	4					Elective	4
Elective	4						
Elective	4						
Elective	4						
		16		0		0	
						8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Concentration course	4	Co-op	0	Co-op	0	Elective	4
ORGB 3201	4					Elective	4
ENGW 3304	4						
Elective	4						
		16		0		0	
						8	

Year 5

Fall	Hours
INTB 4202	4
Elective	4
Elective	4
Elective	4
16	

Total Hours: 131

¹ If a student completes summer classes and no vacation, these electives will not be necessary.

Business Administration Combined Majors

- Business Administration and Design, BS (p. 76)
- Business Administration and Psychology, BS (p. 231)
- Computer Science and Business Administration, BS (p. 234)
- Cybersecurity and Business Administration, BS (p. 239)
- Economics and Business Administration, BS (p. 243)
- Health Science and Business Administration, BS (p. 246)
- Information Science and Business Administration, BS (p. 249)
- Mathematics and Business Administration, BS (p. 253)
- Political Science and Business Administration, BS (p. 256)

Business Administration and Design, BS

The combined major in business administration and design integrates fundamental design courses with the theory and practice of management through active learning, problem-driven research, corporate partnerships, and experiential assignments. The BS degree can be accomplished using the five-year co-op plan.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Business Core Requirements

Code	Title	Hours
Introduction to College		
BUSN 1102	Personal Skill Development for Business	1
or ARTF 1000	Art and Design at Northeastern	
Mathematics		
Complete one of the following:		4
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
MATH 1260	Math Fundamentals for Games	
Macroeconomics and Microeconomics		
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
Business Statistics		
MGSC 2301	Business Statistics	4
International Business/Social Responsibility		

INTB 1203	International Business and Global Social Responsibility	4
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Marketing

MKTG 2201	Introduction to Marketing	4
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Finance

FINA 2201	Financial Management	4
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Organizational Behavior

ORGB 3201	Organizational Behavior	4
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Business Core Option

Complete one of the following:		4
ACCT 2301	Managerial Accounting	
MISM 2301	Management Information Systems	
SCHM 2301	Supply Chain and Operations Management	

Professional Development

BUSN 1103	Professional Development for Business Co-op	1
or EEAM 2000	Professional Development for Co-op	

Art + Design Requirements

Code	Title	Hours
Art + Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (With optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (With optional ARTF 2224)	4

Design Courses

ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (With optional ARTG 2251)	4
ARTG 3350	Typography 2	4
ARTG 3460	Identity and Brand Design	4

Art+Design History

ARTH 1100	Interactive Media and Society	4
ARTH 2215	History of Graphic Design	4

Design Option

Code	Title	Hours
Complete one of the following options:		8
Interaction Design Option		
ARTG 2400	Interaction Design 1: Responsive (With optional ARTG 2401)	
ARTG 3700	Interaction Design 2: Mobile	

Graphic and Information Design Option

ARTG 2252	Graphic Design 1	
ARTG 3463	Experience Design 2	

Experience Design Option

ARTG 3462	Experience Design 1	
ARTG 3463	Experience Design 2	

Marketing Concentration

Code	Title	Hours
Required Courses		
MKTG 3301	Marketing Management	4
MKTG 3401	Marketing Research	4

Electives

At least one course must be taken from the business courses listed and one from the interactive media courses listed.

Complete three of the following: 12

Business

MKTG 4502	Marketing in the Service Sector
MKTG 4504	Advertising and Brand Promotion
MKTG 4506	Consumer Behavior
MKTG 4508	Digital Marketing
MKTG 4510	New Product Development

Art + Design

ARTD 2360	Photo Basics (With optional ARTD 2361)
ARTD 2380	Video Basics (With optional ARTD 2381)
ARTF 2220	4D Fundamentals: Sequence and Drawing (With optional ARTF 2221)
ARTG 2260	Programming Basics
ARTG 3250	Physical Computing
ARTG 3351	Time-Based Design
ARTG 3451	Information Design 1
ARTE 4901	Special Topics in Art and Design Studio

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following list. Requirements for the concentrations are listed below (p. 77).

- Accounting (p. 77)
- Business/Interdisciplinary (p. 78)
- Entrepreneurship and Innovation (p. 78)
- Finance (p. 78)
- Management (p. 78)
- Management Information Systems (p. 79)
- Supply Chain Management (p. 79)

Integrative Courses

Code	Title	Hours
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Integrative Courses

Note: These courses also satisfy requirements above:

MKTG 3301	Marketing Management
ARTG 3460	Identity and Brand Design

Capstone

Complete the interactive media capstone or the business capstone: 4-8

Interactive Media Capstone

ARTG 4550 and ARTG 4551	Design Degree Project 1 and Design Degree Project 2
ARTG 4700 and ARTG 4701	Interaction Team Degree Project 1 and Interaction Team Degree Project 2

Business Capstone

STRT 4501	Strategy in Action
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Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Program Requirement

132 total semester hours required

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following:

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following: 8		
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN BUSINESS/INTERDISCIPLINARY

Code	Title	Hours
Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.		16

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following: 4

ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	

ENTR 4506	Advanced Studies in Social Enterprise	
Electives		
Note: Only one non-ENTR course may be used as an elective.		
Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	

FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	

MISM 3406	Introduction to Web Design, Practices, and Standards
MISM 3501	Information Visualization for Business
MISM 3515	Data Mining for Business
MKTG 4508	Digital Marketing
SCHM 3301	Global Supply Chain Strategy
SCHM 3305	Sourcing and Procurement
SCHM 3308	Supply Chain Analytics

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

**Plan of Study
Five Years, Three Co-ops**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BUSN 1102 or ARTF 1000	1	MGSC 2301	4	Vacation		Vacation	
INTB 1203	4	BUSN 1100	1				
ACCT 1201	4	ENGW 1111, MATH 1231, or MATH 1260	4				
ENGW 1111, MATH 1231, or MATH 1260	4	ARTG 2250 (With optional ARTG 2251)	4				
ARTG 1250	4	ARTF 1122 (With optional ARTF 1123)	4				
		17	17	0		0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MKTG 2201	4	Co-op 1	0	Co-op 1	0	Elective	4
FINA 2201	4					Elective ND or DD	4
BUSN 1103	1						
ARTF 2223 (With optional ARTF 2224)	4						

Art + design history	4						
		17	0	0		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116 or 1115	4	Co-op 2	0	Co-op 2	0	Business core option	4
ORGB 3201	4					ENGW 3302	4
MKTG 3301 or 3401	4						
Design option 1	4						
		16	0	0		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MKTG 3301 or 3401	4	Co-op 3		Co-op 3		Vacation	
Concentration elective 1	4						
Design option 2	4						
ARTG 3350	4						
		16	0	0		0	0
Year 5							
Fall	Hours	Spring	Hours				
Concentration elective 2	4	ARTG 4551, 4701, or STRT 4501	4				
ARTG 3460	4	Concentration elective 3	4				
ARTG 4550 or 4700 (or Elective)	4	Elective	4				
Elective ND or DD	4	Elective	4				
		16	16				

Total Hours: 131

Business Administration and Psychology, BS

This combined major educates students in business and psychology and the interface between the two disciplines. The scope and sequence of psychology courses provide students with a foundation in the interdisciplinary science of psychology, including statistics and research, social psychology, developmental psychology, cognition, and personality. Business courses provide a foundation in accounting, innovation, marketing, management, and organizational behavior, with the opportunity to concentrate in a specific area of business. Students completing this program should be able to understand the relationships between these fields that pertain to explaining and addressing human behavior and business practices.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Business Requirements

Code	Title	Hours
Required Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
ENTR 2301	Innovation!	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4
MISM 2301 or SCHM 2301	Management Information Systems Supply Chain and Operations Management	4
MKTG 2201	Introduction to Marketing	4
ORGB 3201	Organizational Behavior	4
STRT 4501	Strategy in Action	4
Supporting Courses for Business		
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4
MATH 1231	Calculus for Business and Economics	4

Business Concentration

Complete one of the following concentrations. Requirements for the concentrations are listed below (p. 233).

- Accounting (p. 233)
- Entrepreneurship and Innovation (p. 233)
- Finance (p. 233)
- Management (p. 234)
- Management Information Systems (p. 234)
- Marketing (p. 234)
- Supply Chain Management (p. 234)

Psychology Requirements

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 2320 or MGSC 2301	Statistics in Psychological Research Business Statistics	4
PSYC 3402	Social Psychology	4
PSYC 3466	Cognition	4
PSYC 3400	Personality	4
PSYC 3404	Developmental Psychology	4
Required Seminar		
Complete one of the following:		4
PSYC 4650	Seminar in Clinical Case Study	
PSYC 4654	Seminar in Behavioral Modification	
PSYC 4656	Seminar in Biological Psychology	

PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4662	Seminar in Personality
PSYC 4664	Seminar in Social Psychology
PSYC 4666	Seminar in Clinical Psychology
PSYC 4668	Seminar in Sensation and Perception
PSYC 4674	Seminar in Cognitive Neuroscience
PSYC 4676	Seminar in Developmental Psychology
PSYC 4678	Seminar in Social and Affective Neuroscience

Required Lab

Complete one of the following:		4
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4614	Laboratory in Social Psychology	
PSYC 4616	Laboratory in Personality	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4624	Laboratory in Affective Science	
PSYC 4626	Laboratory in Life-Span Emotional Development	
PSYC 4628	Laboratory in Developmental Psychology	

Psychology Electives

Complete two PSYC courses not used to fulfill the requirements above:		8
PSYC 1001 to PSYC 5999		

Supporting Courses

Code	Title	Hours
Introduction to College		
BUSN 1102 or PSYC 1000	Personal Skill Development for Business Psychology at Northeastern	1
Co-op Preparation		
Complete one of the following:		1-5
BUSN 1101 and BUSN 1103	Introduction to Business and Professional Development for Business Co-op	
EESC 2000	Professional Development for Co-op	

Integrative Course

Code	Title	Hours
ORGB 3201	Organizational Behavior	4

Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Psychology GPA Requirement

A minimum 2.000 GPA in psychology courses is required.

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Program Requirement

128 total semester hours required

Business Concentration

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	

ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	

FINA 4610 Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Computer Science and Business Administration, BS

The computer science and business combined major delivers a technical degree with a strong grounding in business. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while also focusing on technical skills like program design, software development, computer organization, systems and networks, theories of computation, principles of languages, and advanced algorithms and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Complete two of the following: 8

CS 3650	Computer Systems	
CS 3700	Networks and Distributed Systems	
DS 4100	Data Collection, Integration, and Analysis	
DS 4200	Information Presentation and Visualization	
DS 4300	Large-Scale Information Storage and Retrieval	

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete four credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

Business Courses

Code	Title	Hours
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Required Business Courses

ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
ORGB 3201	Organizational Behavior	4

MKTG 2201	Introduction to Marketing	4
MGSC 2301	Business Statistics	4
Choose one of the following: ¹		4
STRT 4501	Strategy in Action	
STRT 4516	External Case Competition Challenge	

¹ Strategy in Action (STRT 4501), and External Case Competition Challenge (STRT 4516) both satisfy the capstone requirement.

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below (p. 236).

- Accounting (p. 236)
- Entrepreneurship and Innovation (p. 236)
- Finance (p. 236)
- Management (p. 237)
- Marketing (p. 237)
- Supply Chain Management (p. 237)

Integrative Course

Code	Title	Hours
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Information Resource Management

MISM 2301	Management Information Systems	4
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Supporting Courses

Code	Title	Hours
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Mathematics

MATH 1341	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	

Economics

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4

Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete four general electives.		16

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Computer Science GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Concentrations**CONCENTRATION IN ACCOUNTING**

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		

ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	
Introductory Course		
ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	
Capstone Course		
Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	
Electives		
Note: Only one non-ENTR course may be used as an elective.		
Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301	Corporate Finance	4
or FINA 3303	Investments	
Electives		
Complete three of the following:		12

ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment
FINA 3301	Corporate Finance (if not selected as a required course)
FINA 3303	Investments (if not selected as a required course)
FINA 4219	Portfolio Management
FINA 4220	Behavioral Finance
FINA 4310	Working Capital Management
FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	

ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
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CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301 or MKTG 4506	Marketing Management Consumer Behavior	4
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	MATH 1341 or 1231	4	Vacation
CS 1800 and CS 1802	5	CS 3200	4	ACCT 1201	4	
CS 2500 and CS 2501	5	ECON 1116	4			
ENGW 1111	4	Elective	4			

ECON 1115	4						
	19		17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ACCT 2301	4	Business concentration 1	4	MKTG 2201	4	Co-op	
CS 3500	4	CS 3000	4	Elective	4		
MGSC 2301	4	Computing and social issues	4				
Elective	4	CS 1210	1				
		Elective	4				
	16		17		8		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3650	4	FINA 2201	4	Co-op	
		MISM 2301	4	ORGB 3201	4		
		Business concentration 2	4				
		CS/IS/DS elective	4				
		THTR 1170	1				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3700	4	STRT 4501	4		
		CS 4500 and CS 4501	4	ENGW 3302	4		
		Business concentration 3	4				
		Business concentration 4	4				
	0		16		8		

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 3200	4				
CS 1200	1	ECON 1116	4				
ECON 1115	4	Elective	4				
ENGW 1111	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	ACCT 2301	4	Vacation	0	Co-op	0
MATH 1341	4	CS 3000	4				
ACCT 1201	4	FINA 2201	4				

MGSC 2301	4	CS 1210	1				
		Elective	4				
	16		17		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3650	4	ORGB 3201	4	Co-op	0
		Business concentration 1	4	MKTG 2201	4		
		MISM 2301	4				
		ENGW 3302	4				
		THTR 1170	1				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Business concentration 2	4	Elective	4	Co-op	0
		CS 3700	4	Elective	4		
		Business concentration 3	4				
		CS/IS/DS elective	4				
	0		16		8		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	STRT 4501	4				
		Business concentration 4	4				
		CS 4500 and CS 4501	4				
		Computing and social issues	4				
	0		16				

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 3200	4				
CS 1200	1	ECON 1116	4				
ECON 1115	4	Elective	4				
ENGW 1111	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
MATH 1341	4						
ACCT 1201	4						

MGSC 2301	4			
CS 1210	1			
	17	0	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ACCT 2301	4	Co-op	0	Co-op	0	ORGB 3201	4
CS 3000	4					MKTG 2201	4
Elective	4						
FINA 2201	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3650	4	Co-op	0	Co-op	0	Elective	4
Business concentration 1	4					Elective	4
MISM 2301	4						
ENGW 3302	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CS/IS/DS elective	4	STRT 4501	4
Business concentration 2	4	CS 4500 and CS 4501	4
Business concentration 3	4	Computing and social issues	4
CS 3700	4	Business concentration 4	4
	16		16

Total Hours: 134

Cybersecurity and Business Administration, BS

The cybersecurity and business combined major delivers a technical and security-focused degree with a strong grounding in business. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while also focusing on the conceptual and practical computer science skills that will enable them to contribute to ensuring the reliability and security of cyberspace.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4

Cybersecurity Required Courses

CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
or IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
CS 4740	Network Security	4

Cybersecurity Electives

If courses require prerequisites, those should be taken using general electives.

Complete one course from the following: 3-4

CS 2800	Logic and Computation	
CS 4240	Large-Scale Parallel Data Processing	
CS 4400	Programming Languages	
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4710	Mobile and Wireless Systems	
CS 5770	Software Vulnerabilities and Security	
CS 6710	Wireless Network	
DS 4300	Large-Scale Information Storage and Retrieval	
DS 4400	Machine Learning and Data Mining 1	
IA 5200	Security Risk Management and Assessment	
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210	
IS 4300	Human Computer Interaction	
EECE 2160	Embedded Design: Enabling Robotics	
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	

EECE 3324	Computer Architecture and Organization
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534
MATH 3527	Number Theory 1
MATH 4575	Introduction to Cryptography
COMM 2551	Free Speech in Cyberspace
CRIM 2200	Criminology
CRIM 3030	Global Criminology
CRIM 3400	Corporate Security: Securing the Private Sector
CRIM 4040	Crime Prevention
LPSC 1101	Introduction to Law
LPSC 2301	Introduction to Law, Policy, and Society
LPSC 3303	Topics in Law and Public Policy
PHIL 1145	Technology and Human Values
POLS 2390	Science, Technology, and Public Policy
POLS 3307	Public Policy and Administration
POLS 3324	Law and Society
POLS 3406	International Law
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3423	Terrorism and Counterterrorism

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Statistics		
MGSC 2301	Business Statistics	4
Strategy		
STRT 4501	Strategy in Action	4
or STRT 4516	External Case Competition Challenge	

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below. (p. 241)

- Accounting (p. 241)
- Entrepreneurship and Innovation (p. 241)
- Finance (p. 241)
- Management (p. 242)
- Marketing (p. 242)
- Supply Chain Management (p. 242)

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Integrative Requirement

Code	Title	Hours
MISM 2301	Management Information Systems	4

Supporting Courses

Code	Title	Hours
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Mathematics Courses

Complete one of the following: 4

MATH 1341	Calculus 1 for Science and Engineering
MATH 1231	Calculus for Business and Economics

Economics

Complete one of the following: 4

ECON 1115	Principles of Macroeconomics
ECON 1116	Principles of Microeconomics

Writing Requirements

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:

ENGW 3302	Advanced Writing in the Technical Professions
ENGW 3308	Advanced Writing in the Social Sciences
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete four general electives.		16

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Business GPA Requirement

Minimum 2.000 GPA required in all business courses.

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 semester hours required

Business Concentrations**CONCENTRATION IN ACCOUNTING**

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	

ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	

FINA 4610 Entrepreneurial Finance, Innovation Valuation, and Private Equity

MKTG 4510 New Product Development

MKTG 4512 International Marketing

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	CS 2550	4	Elective 1	4		
CS 2500 and CS 2501	5	MATH 1341 or 1231	4				
ENGW 1111	4	ACCT 1201	4				
ECON 1115 or 1116	4						
		19		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 3700	4	MKTG 2201	4	Co-op	
CS 3650	4	CS 3740	4	Elective 3	4		
ACCT 2301	4	Business concentration 1	4				
MGSC 2301	4	Elective 2	4				
		CS 1210	1				
		16		17		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4170 or IA 5240	4	FINA 2201	4	Co-op	
		Business concentration 2	4	ORGB 3201	4		
		Business concentration 3	4				
		CS 4740	4				

	THTR 1170	1			
	0	17	8	0	
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		ENGW 3302	4	STRT 4501	4
		MISM 2301	4	Elective 4	4
		Business concentration	4		
		Cybersecurity elective	4		
	0	16	8		

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	CS 2550	4				
CS 2500 and CS 2501	5	MATH 1341 or 1231	4				
ENGW 1111	4	ACCT 1201	4				
ECON 1115 or 1116	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Vacation		Co-op	
CS 3650	4	CS 3700	4				
ACCT 2301	4	CS 3000	4				
MGSC 2301	4	Business concentration 1	4				
		Elective 1	4				
	16		17		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3740	4	FINA 2201	4	Co-op	
		MKTG 2201	4	ORGB 3201	4		
		THTR 1170	1				
		Business concentration 2	4				
		Elective 2	4				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4170 or IA 5240	4	ENGW 3302	4	Co-op	
		CS 4740	4	Elective 4	4		
		Business concentration 3	4				

Elective 3				
	0	12	8	0
Year 5				
Fall	Hours	Spring	Hours	
Co-op		MISM 2301	4	
		STRT 4501	4	
		Business concentration	4	
		Cybersecurity elective	4	
	0	16		

Total Hours: 130

Economics and Business Administration, BS

The combined major with business administration is our most popular combined major, combining the underlying economic theories and models and their business applications. After satisfying the core courses in economics, there are over 40 electives from which to choose to complete this combined major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Grades in required economics courses must average a minimum GPA of 2.000 with no grade lower than C-.

Code	Title	Hours
Introduction to College		
ECON 1000	Economics at Northeastern	1
or BUSN 1102	Personal Skill Development for Business	
Required Economics Courses		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
or MGSC 2301	Business Statistics	
ECON 2560	Applied Econometrics	4

Economics Electives

Complete four courses from the following lists with no more than one at the introductory level: 16

Introductory

ECON 1200 to ECON 1990

Intermediate/Advanced

ECON 2990 to ECON 3499

ECON 3520 History of Economic Thought

ECON 3915 Intermediate Selected Topics in Macroeconomics

ECON 3916 Intermediate Selected Topics in Microeconomics

ECON 3990 Elective

ECON 4600 to ECON 4681

ECON 4915 to ECON 4916

ECON 4965 Undergraduate Teaching Experience 1

ECON 4970 to ECON 4990

ECON 4992 Directed Study

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4

Business Concentration

Complete one of the following business concentrations. Requirements for the concentrations are listed below (p.).

- Accounting (p. 244)
- Entrepreneurship and Innovation (p. 244)
- Finance (p. 245)
- Management (p. 245)
- Management Information Systems (p. 245)
- Marketing (p. 246)
- Supply Chain Management (p. 246)

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1231 or MATH 1341	Calculus for Business and Economics Calculus 1 for Science and Engineering	4
Computer Science		
CS 1100	Computer Science and Its Applications	4

Co-op Preparation

BUSN 1103	Professional Development for Business Co-op	1
or EESH 2000	Professional Development for Co-op	

Capstone Requirement

ECON 4692	Senior Economics Seminar	4
STRT 4501	Strategy in Action	4

Economics GPA Requirement

Minimum 2.000 GPA required in all economics courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

Concentrations**CONCENTRATION IN ACCOUNTING**

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	

ENTR 4503	Business Planning for Small and Medium Enterprises
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise
Electives	
Note: Only one non-ENTR course may be used as an elective.	
Complete two of the following: 8	
ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following: 12		
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	

FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following: 12		
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		

Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Health Science and Business Administration, BS

The combined major in Health Science and Business Administration provides students at Northeastern with an opportunity to study a

curriculum that is synergetic with the growing field of health care. This academic combination will provide students with the knowledge and expertise needed to enter a multitude of careers upon graduation. The degree will allow students the unique opportunity to better understand the business side of the health care industry in Massachusetts, which is home to some of the best hospitals and medical research companies in the country. The field is compatible with all the undergraduate concentrations in the School of Business and prepares students to enter the workforce after graduation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Health Science Requirements

Code	Title	Hours
Public Health Core		
PHTH 1260	The American Healthcare System	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 4540	Health Education and Program Planning	4
HLTH 5450	Healthcare Research	4
Supporting Courses for Health Science		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
PSYC 1101	Foundations of Psychology	4

Business Administration Requirements

Code	Title	Hours
Required Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4

Business Electives	
Complete two of the following: 8	
MISM 2301	Management Information Systems
MKTG 2201	Introduction to Marketing
SCHM 2301	Supply Chain and Operations Management
ORGB 3201	Organizational Behavior

Supporting Courses for Business	
ECON 1115	Principles of Macroeconomics 4
ECON 1116	Principles of Microeconomics 4

Business Concentration

Complete one of the following concentrations. Requirements for the concentrations are listed below. (p. 247)

- Accounting
- Entrepreneurship and Innovation
- Finance
- Management
- Management Information Systems
- Marketing
- Supply Chain Management

Supporting Courses

Code	Title	Hours
Introduction to College		
HSCI 1000	College: An Introduction	1
or BUSN 1102	Personal Skill Development for Business	

Calculus	
MATH 1231	Calculus for Business and Economics 4
or MATH 1241	Calculus 1

Statistics	
PHTH 2210	Foundations of Biostatistics 4
or MGSC 2301	Business Statistics

Co-op Preparation	
Complete one of the following: 4-5	
BUSN 1101 and BUSN 1103	Introduction to Business and Professional Development for Business Co-op
HSCI 2000	Professional Development for Bouvé Co-op

Capstone	
Complete one of the following: 4	
STRT 4501	Strategy in Action
HSCI 4720	Health Science Capstone—Service (Prerequisite course HSCI 4700)
HSCI 4730	Health Science Capstone—Research (Prerequisite course HSCI 4700)

Integrative Requirement

Code	Title	Hours
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	4

Business GPA Requirement

A minimum 2.000 GPA is required in all business courses.

Program Requirement

132 total semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following: 8		
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course	
ENTR 2301	Innovation! 4
or ENTR 2303	Entrepreneurial Marketing and Selling

Capstone Course	
Complete one of the following: 4	
ENTR 4501	Business Planning for Technology Ventures
ENTR 4503	Business Planning for Small and Medium Enterprises
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise

Electives	
Note: Only one non-ENTR course may be used as an elective.	
Complete two of the following: 8	
ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality

ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	

FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Information Science and Business Administration, BS

The information science and business combined major provides a technical degree with a strong grounding in business. Information science combines concepts and skills from computer science, behavioral and social science, and system design into an integrated, people-centered curriculum. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while studying how information is acquired, organized, communicated, and used by both people and computers.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
Information Science Required Courses		
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods	4
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1

Business Courses

Code	Title	Hours
Required Business Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
ORGB 3201	Organizational Behavior	4
MKTG 2201	Introduction to Marketing	4
MGSC 2301	Business Statistics	4
Choose one of the following: ¹		4
STRT 4501	Strategy in Action	
STRT 4516	External Case Competition Challenge	

¹ Strategy in Action (STRT 4501), and External Case Competition Challenge (STRT 4516) satisfy the capstone requirement.

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below (p. 250).

- Accounting (p. 250)
- Entrepreneurship and Innovation (p. 250)

- Finance (p. 251)
- Management (p. 251)
- Marketing (p. 251)
- Supply Chain Management (p. 252)

Integrative Requirement

Code	Title	Hours
MISM 2301	Management Information Systems	4
MISM 3404	Data Communications	4

Supporting Courses

Code	Title	Hours
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Mathematics

MATH 1341	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	

Economics

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4

Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete four general electives.		16

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Information Science GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning

- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
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Required Courses

ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4

Electives

Complete two of the following: 8

ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following: 4

ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following: 8

ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code Title Hours

Required Course

FINA 3301 or FINA 3303	Corporate Finance Investments	4
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Electives

Complete three of the following: 12

ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment
FINA 3301	Corporate Finance (if not selected as a required course)
FINA 3303	Investments (if not selected as a required course)
FINA 4219	Portfolio Management
FINA 4220	Behavioral Finance
FINA 4310	Working Capital Management
FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management

FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code Title Hours

Required Course

MGMT 4501	Skills for Managerial Success	4
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Electives

Note: Only one non-MGMT course may be used as an elective.

Complete three of the following: 12

MGMT 3302	Negotiating in Business
MGMT 3315	Managing Organizational Change and Disruption
MGMT 3330	Developing Leaders for Global Sustainability
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches
MGMT 3350	Managing a Diverse Workforce
MGMT 3360	Law and the Legal Process
MGMT 3420	Managing Human Capital
MGMT 3510	Managing Global Teams Virtually and Locally
MGMT 3530	Project Management
MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MARKETING

Code Title Hours

Required Courses

MKTG 3401	Marketing Research	4
MKTG 3301 or MKTG 4506	Marketing Management Consumer Behavior	4

Electives

Complete two of the following: 8

MKTG 2301	Marketing and Society
MKTG 3301	Marketing Management (if not selected as a required course)
MKTG 3501	Marketing Analytics

MKTG 4220	Marketing in Asia
MKTG 4420	Sales Management
MKTG 4502	Marketing in the Service Sector
MKTG 4504	Advertising and Brand Promotion
MKTG 4506	Consumer Behavior (if not selected as a required course)
MKTG 4508	Digital Marketing
MKTG 4510	New Product Development
MKTG 4512	International Marketing

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	ACCT 1201	4	Vacation	
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341 or 1231	4		
CS 2500 and CS 2501	5	ECON 1116	4				
ENGW 1111	4	Elective	4				
ECON 1115	4						
19		17		8		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	MKTG 2201	4	Co-op	
CS 3500	4	Business concentration 1	4	FINA 2201	4		
ACCT 2301	4	CS 3000	4				
MGSC 2301	4	Elective	4				
		CS 1210	1				
16		17		8		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Business concentration 2	4	ORGB 3201	4	Co-op	

MISM 2301	4	Elective	4				
Business concentration 3	4						
Computing and social issues	4						
THTR 1170	1						
0		17		8		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		IS 4800	4	STRT 4501	4
		ENGW 3302	4	Elective	4
		Business concentration 4	4		
		MISM 3404	4		
0		16		8	

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 3200	4				
CS 1200	1	ECON 1116	4				
ECON 1115	4	Elective	4				
ENGW 1111	4						
19		17		0		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Vacation	0	Co-op	0
CS 3500	4	ACCT 2301	4				
ACCT 1201	4	Elective	4				
MGSC 2301	4	CS 3000	4				
		CS 1210	1				
16		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		MISM 3404	4	ORGB 3201	4	Co-op	0
		FINA 2201	4	MKTG 2201	4		
		MATH 1341	4				
		ENGW 3302	4				
		THTR 1170	1				
0		17		8		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4800	4	Elective	4	Co-op	0
		MISM 2301	4	Elective	4		
		Business concentration 1	4				

	Business concentration 2	4		
		0	16	8
Year 5				
Fall	Hours	Spring	Hours	
Co-op	0	STRT 4501	4	
	Business concentration 3	4		
	Computing and social issues	4		
	Business concentration 4	4		
		0	16	

Total Hours: 134

Mathematics and Business Administration, BS

A combined major combines two majors in a way that allows a student to fulfill all requirements within the standard 128 credits. For details, see program requirements.

Current students can also find details about combined majors and minors by going to their audit, clicking on “explore options,” and finding the appropriate program. Students will be able to see a list of required courses and will be able to track their progress toward fulfilling them.

In the BS combined mathematics and business administration degree program, business and mathematics courses lay the groundwork for strong basic training in finance.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Requirements

Code	Title	Hours
Required Courses		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 1365	Introduction to Mathematical Reasoning	4
MATH 3081	Probability and Statistics	4
Calculus and Linear Algebra (Required) and Differential Equations (Recommended)		
Complete either Option 1 or Option 2 below:		8

Option 1 (Recommended)		
MATH 2321	Calculus 3 for Science and Engineering	
MATH 2341	Differential Equations and Linear Algebra for Engineering	

Option 2		
MATH 2321	Calculus 3 for Science and Engineering	
or MATH 2323	Calculus 3 for Business, Economics, and Mathematics	
MATH 2331	Linear Algebra	

Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1

Mathematics Electives		
Complete three courses in the range MATH 3001 to MATH 5999. The following courses are recommended:		12
MATH 4681	Probability and Risks	
MATH 4682	Theory of Interest and Basics of Life Insurance	
MATH 4581	Statistics and Stochastic Processes	

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4
Strategy in Action		
STRT 4501	Strategy in Action	4

Integrative Course

Note: Financial Risk Management (FINA 4512) also counts toward the finance concentration.

Code	Title	Hours
FINA 4512	Financial Risk Management	4

Finance Concentration

Code	Title	Hours
Finance Requirements		
FINA 3301	Corporate Finance	4
FINA 3303	Investments	4
FINA 4512	Financial Risk Management	4
Finance Elective		
Complete one of the following:		4
ENTR 3520	Impact Investing and Social Finance	
or FINA 2720	Sustainability in the Business Environment	
FINA 4604	Fixed-Income Securities (Recommended)	

FINA 4310	Working Capital Management
FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4526	Core Topics in Alternative Investments
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
FINA 4983	Special Topics in Finance

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following list. Requirements for the concentrations are listed below (p. 254).

- Accounting (p. 254)
- Business/Interdisciplinary (p. 254)
- Entrepreneurship and Innovation (p. 254)
- Management (p. 255)
- Management Information Systems (p. 255)
- Marketing (p. 255)
- Supply Chain Management (p. 255)

Supplemental Courses

Code	Title	Hours
Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
Co-op Preparation		
BUSN 1103	Professional Development for Business Co-op	1
or EESC 2000	Professional Development for Co-op	

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Mathematics GPA Requirement

Minimum 2.000 GPA required in all mathematics courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4

Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN BUSINESS/INTERDISCIPLINARY

Code	Title	Hours
Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.		16

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	

ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4

Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Political Science and Business Administration, BS

The combined major in political science and business administration offers students the opportunity to integrate the study of politics and government with an analysis of business practices and organizations. Students complete core courses in political science along with core courses in business administration that cover accounting, finance, marketing, and organizational behavior. This combined major highlights the important intersection between business practices and the evolution of politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Introduction to College		
POLS 1000	Political Science at Northeastern	1
or BUSN 1102	Personal Skill Development for Business	
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
Political Theory		
Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Restricted Electives		
Complete two of the following:		8
POLS 3307	Public Policy and Administration	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	
Statistics		
POLS 2400	Quantitative Techniques	4
or MGSC 2301	Business Statistics	

Political Science Electives

Complete two courses in the following range, or complete a political science concentration as outlined below: 8
POLS 3300 to POLS 5999

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 258).

- American Political Institutions (p. 258)
- Identity, Culture, and Politics (p. 259)
- Law and Legal Studies (p. 259)

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4

Business Concentration

Complete one of the following business concentrations. Requirements for the concentrations are listed below (p. 257).

- Accounting (p. 257)
- Entrepreneurship and Innovation (p. 257)
- Finance (p. 257)
- Management (p. 258)
- Management Information Systems (p. 258)
- Marketing (p. 258)
- Supply Chain Management (p. 258)

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1231	Calculus for Business and Economics	4
or MATH 1341	Calculus 1 for Science and Engineering	
Economics		
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Co-op Preparation		
BUSN 1103	Professional Development for Business Co-op	1
or EESH 2000	Professional Development for Co-op	

Integrative Requirement

Code	Title	Hours
POLS 4701	Political Science Senior Capstone	4

or STRT 4501	Strategy in Action
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The following course is fulfilled through the political science requirement:

POLS 1160

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Political Science GPA Requirement

Minimum 2.000 GPA required in all political science courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	

ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301	Corporate Finance	4
or FINA 3303	Investments	
Electives		
Complete three of the following:		12
ENTR 3520	Impact Investing and Social Finance	
or FINA 2720	Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	

FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4

Electives

Note: Only one non-MGMT course may be used as an elective.

Complete three of the following: 12

MGMT 3302	Negotiating in Business
MGMT 3315	Managing Organizational Change and Disruption
MGMT 3330	Developing Leaders for Global Sustainability
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches
MGMT 3350	Managing a Diverse Workforce
MGMT 3360	Law and the Legal Process
MGMT 3420	Managing Human Capital
MGMT 3510	Managing Global Teams Virtually and Locally
MGMT 3530	Project Management
MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4

Electives

Note: Only one non-MISM course may be used as an elective.

Complete two of the following: 8

MISM 2510	Fundamentals of Information Analytics
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MISM 3305	Information Resource Management
MISM 3404	Data Communications
MISM 3406	Introduction to Web Design, Practices, and Standards
MISM 3501	Information Visualization for Business
MISM 3515	Data Mining for Business
MKTG 4508	Digital Marketing
SCHM 3301	Global Supply Chain Strategy
SCHM 3305	Sourcing and Procurement
SCHM 3308	Supply Chain Analytics

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	

Electives

Complete two of the following: 8

MKTG 2301	Marketing and Society
MKTG 3301	Marketing Management (if not selected as a required course)
MKTG 3501	Marketing Analytics
MKTG 4220	Marketing in Asia
MKTG 4420	Sales Management
MKTG 4502	Marketing in the Service Sector
MKTG 4504	Advertising and Brand Promotion
MKTG 4506	Consumer Behavior (if not selected as a required course)
MKTG 4508	Digital Marketing
MKTG 4510	New Product Development
MKTG 4512	International Marketing

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		

SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4

Elective

Complete one of the following: 4

SCHM 3308	Supply Chain Analytics
SCHM 3320	Demand Planning and Forecasting
SCHM 3330	Sustainability and Supply Chain Management
SCHM 4401	Advanced Problems in Supply Chain Management

Political Science Concentrations (Optional)**CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS**

Code	Title	Hours
Complete four of the following: 16		
POLS 2350	State and Local Politics	

POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Concentrations

- Accounting (p. 259)
- Business/Interdisciplinary (p. 259) (available only as a second concentration)
- Entrepreneurship and Innovation (p. 259)
- Finance (p. 260)
- Management (p. 261)
- Management Information Systems (p. 261)
- Marketing (p. 262)
- Supply Chain Management (p. 262)

Accounting

Website (<http://www.damore-mckim.neu.edu>)

404 Hayden Hall
617.373.3240
617.373.8814 (fax)

Ganesh Krishnamoorthy, Professor and Group Coordinator,
g.krishnamoorthy@northeastern.edu

A concentration in accounting aims to prepare the graduate for entry into public accounting or private industry in a highly valued career. Accounting is a dynamic profession that requires people to possess

sound technical knowledge, critical thinking skills, superior interpersonal skills, and the ability to communicate effectively. Accountants hold senior management positions in private companies in business or industry, public accounting firms, and government agencies.

To prepare for an accounting career, students take courses in financial reporting, managerial accounting, and intermediate accounting, with additional elective courses available for more specialized studies in strategic cost analysis, auditing and other assurance services, income tax planning, and accounting information systems. Students wishing to sit for the CPA exam may combine the BSBA with a concentration in accounting with the Master of Science in Accounting (five-year BSBA/MSA program).

Concentration Requirements

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

Business/Interdisciplinary

Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.

Concentration Requirements

Note: Business/interdisciplinary is only available as a second concentration.

CONCENTRATION IN BUSINESS/INTERDISCIPLINARY

Code	Title	Hours
Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.		16

Entrepreneurship and Innovation

Website (<http://www.damore-mckim.neu.edu>)

214 Hayden Hall
617.373.3241
617.373.8628 (fax)

Tucker Marion, The Sam and Nancy Altschuler Faculty Fellow; Bornstein Endowed Faculty Fellow
Professor of Technological Entrepreneurship; Entrepreneurship and Innovation Group Coordinator, Academic Programs,
t.marion@northeastern.edu

Fernando F. Suarez, Jean C. Tempel Professor, Entrepreneurship and Innovation; Entrepreneurship and Innovation Group Coordinator, Research and Tenure-Track Faculty, f.suarez@northeastern.edu

Entrepreneurship and Innovation Group offers a dynamic set of courses for students considering career paths as either entrepreneurs or corporate innovators. It is also a wonderful complement to finance, marketing, and other disciplines interested in learning and applying entrepreneurial thinking to business problems. We offer three specific tracks within the concentration—technological entrepreneurship, family business, and social enterprise—in which there is a required capstone that varies by these three tracks, plus any other three ENTR courses from a broad menu. In addition, the Entrepreneurship and Innovation Group provides a five-course interdisciplinary entrepreneurship minor for non-D'Amore-McKim students in which college-specific courses in innovation and design can be combined with D'Amore-McKim School of Business entrepreneurship courses. We also offer a concentrated course of study with an off-campus program in Silicon Valley. This program leverages the strength of our campus network and builds on the university's existing brand in entrepreneurship so students have an opportunity to build their own network of future entrepreneurs within Silicon Valley. In all these programs, the professors have been entrepreneurs and innovators throughout their careers. This makes the courses both cutting edge and "real world."

There are also specialized field studies in our international new ventures and Dialogues of Civilization programs, conducted in Summer 1 and Summer 2. Locales include South Africa, India, Italy, South Korea, and Israel.

Even if you don't wish to start your own company, *entrepreneurial thinking* is an attribute greatly valued by employers across industry and around the world.

Concentration Requirements

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following: 4

ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

Finance

Website (<http://www.damore-mckim.neu.edu>)

413 Hayden Hall
617.373.3616
617.373.8798 (fax)
Olubunmi Faleye, Professor and Group Coordinator, o.faleye@northeastern.edu

The role of people trained in finance is expanding rapidly within the business world. Changes on the financial scene—rising securities prices, fluctuating inflation, currency values and interest rates, and globalization of markets—have created an awareness that financial knowledge is essential to the effective management of business firms and many other types of organizations.

Finance is the management of real and monetary assets for businesses, financial institutions, nonprofit organizations, governments, and individuals. Finance courses draw on accounting principles, economic theory, and quantitative methods. These courses develop methods to direct the way capital is acquired and managed. Students are exposed to economic and financial systems and how they operate. They also are given an opportunity to analyze economic trends and indicators and to apply this analysis to financial decision making.

Students may specialize in one or more of the following areas: corporate finance, investment management and analysis, risk management, and

real estate. The program is designed to prepare students for careers in corporate financial management, security analysis, investment management, security or insurance brokerage, credit management, and risk management with corporations, banks, insurance companies, and other financial institutions.

Concentration Requirements

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

Management

Website (<http://www.damore-mckim.neu.edu>)
112 Hayden Hall
617.373.2452
617.373.2491 (fax)
Cynthia Lee, Professor and Group Coordinator, c.lee@northeastern.edu

Managing—whether it's people, projects, or programs—is challenging and requires a considerable range of knowledge and skills. Effective managers must know the business, be interpersonally competent, behave ethically, and diagnose and deal with human and organizational dynamics. The aim of the management concentration is to increase both managerial *knowledge* and management *skills*. This involves both studying *and* practicing topics such as motivation, leadership, negotiation, conflict resolution, project management, managing teams, organizational change, and their impact on business results.

Management concentrators participate in vibrant co-op experiences spanning a diverse range of business functions. These cover a wide number of possibilities such as business analytics, human resources, client and sales support, and project management. Many students who concentrate in management decide to get a second concentration, giving them the ability to work in teams and manage other people in whatever arena they find themselves.

Concentration Requirements

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

Management Information Systems

Website (<http://www.damore-mckim.neu.edu>)
314 Hayden Hall
617.373.3132
617.373.3166 (fax)
Yang W. Lee, Associate Professor and Group Coordinator, y.lee@northeastern.edu

In the global information age, success for individuals and for companies requires the ability to manage information effectively. To that end, the goal of the management information systems concentration is to teach future managers how to use information systems (IS) and information technology (IT) to help organizations and individuals perform more efficiently and effectively. This can lead the student in two career directions:

- To become a professional in the cross-functional business data, information management, data governance function of a company or in an IT or data-enabled strategic business consulting company
- To accelerate and enhance a career in another functional area such as finance, marketing, research and development/innovation, accounting, human resource, strategic management, or acquisition

Understanding how to get the right information in the right form and format to the right people at the right time is essential in today's business world, especially when companies and the individuals that do this well are achieving significant competitive advantage. Students have an opportunity to develop new, cutting-edge approaches that allow them to use the powerful resource of information to its greatest advantage. They also have the opportunity to develop technical and problem-solving skills that are in high demand by employers.

Managers in the IS function need to interact frequently with other managers throughout an organization. Therefore, students are encouraged to complete a dual concentration in management information systems and another area of business. Graduates of this program have a wide range of career paths that suit their particular interests. Professional options include business/systems analyst, database designer and administrator, webmaster, software help-desk expert, project specialist, consultant, network administrator, and IT specialist within other departments, such as financial services, accounting, marketing, or manufacturing.

Concentration Requirements

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

Marketing

Website (<http://www.damore-mckim.neu.edu>)

202 Hayden Hall

617.373.3260

617.373.8366 (fax)

Bruce H. Clark, Associate Professor and Group Coordinator, b.clark@northeastern.edu

According to the American Marketing Association, marketing is "an organizational function and a set of processes for creating, communicating, and delivering value to customers, and for managing

customer relationships in ways that benefit the organization and its stakeholders." Create something people want, tell them about it, and deliver it to them in a way so that everyone benefits.

The concentration in marketing offers students an opportunity to develop an understanding of the role of the marketing function in the organization as well as detailed insight into various aspects of marketing processes, including strategy, buyer behavior, market research and analytics, digital and mobile media, marketing communications, sales, services, and new product development. Students prepare for possible careers in areas such as brand and product management, consulting, digital marketing, entrepreneurship, marketing research, marketing communications, and sales and account management.

Concentration Requirements

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

Supply Chain Management

Website (<http://www.damore-mckim.neu.edu>)

314 Hayden Hall

617.373.3132

617.373.3166 (fax)

Yang W. Lee, Associate Professor and Group Coordinator, y.lee@northeastern.edu

From the *Fortune* 500 manufacturer to the small firm that produces, sells, or distributes products, all companies have a supply chain function that must be effectively managed if they are to be competitive. A supply chain manager is typically involved in making critical decisions about such matters as the modes of transportation used to move the company's materials and products, inventory policies, warehousing needs, customer service standards, and the location of facilities.

As companies become increasingly involved in global markets as both buyers and sellers, supply chain managers play a major role not only in assessing the feasibility of international activity but also in developing supply and distribution networks to support that involvement.

Because supply chain managers frequently interact with those involved in other areas of management, many supply chain management students have chosen to complete a second concentration in such areas as marketing, information management, or finance.

In addition to finding career opportunities with manufacturers, retailers, and distributors, supply chain management students may find similar opportunities with companies that sell supply chain services or transportation services in the marketplace. Consulting firms and government agencies at the federal, state, and local levels provide other career options.

Concentration Requirements

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Minors

Students who wish to enter one of the minor programs listed below should complete the online minor form accessible via the D'Amore-McKim School of Business Undergraduate Programs website. Students who complete all required courses successfully and have earned at least a C (2.000) average in them will be awarded the minor at graduation.

- Business Administration, Minor (p. 263)
- Business Analytics, Minor (p. 263)
- Emerging Markets, Minor (p. 264)
- Entrepreneurship, Minor (p. 264)
- Global Social Entrepreneurship, Minor (p. 265)
- Leadership and Human Capital, Minor (p. 265)
- Strategy, Minor (p. 266)
- Sustainable Business Practices, Minor (p. 266)

Business Administration, Minor

The minor in business administration introduces nonbusiness students to the key functional areas in business, providing a broad overview of the business world. The minor is available to nonbusiness students only.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Accounting

Code	Title	Hours
ACCT 1209	Financial Accounting and Reporting	4

Organizational Behavior

Code	Title	Hours
ORGB 3209	Organizational Behavior	4

Finance

Code	Title	Hours
FINA 2209	Financial Management (ACCT 1209 is a prerequisite)	4

Marketing

Note: It is recommended that students complete Financial Accounting and Reporting (ACCT 1209) prior to taking Introduction to Marketing (MKTG 2209):

Code	Title	Hours
MKTG 2209	Introduction to Marketing	4

Business Elective

Code	Title	Hours
Complete one of the following courses or, with the approval of the undergraduate dean's office, any business course for which the prerequisites have been met:		4

BUSN 1110	Fundamentals of Business	
ENTR 1201	The Entrepreneurial Universe	
ENTR 2206	Global Social Enterprise	
ENTR 2301	Innovation!	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
FINA 1209	Personal Finance	
FINA 2720	Sustainability in the Business Environment	
INTB 1209	International Business and Global Social Responsibility	
INTB 2501	Competing to Win in Emerging Markets	

GPA Requirement

2.000 GPA required in the minor

Business Analytics, Minor

The business analytics minor is open to undergraduate students with any major and concentration. The minor program offers contemporary data-grounded courses from a business perspective. The goal of these courses is to help students develop business data capability that can be applied to all business and decisions contexts. The minor courses include both fundamental courses and courses geared toward more specific data analytics challenges. Each of these courses will include real-world examples and data sets, grounded in relevant theory and principles, and will be reinforced using various user-friendly tools to gain the necessary skills and knowledge for tomorrow's work environment.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified. Only one course in the minor may double count with one of the seven business concentrations.

Required Course

Code	Title	Hours
MISM 2301	Management Information Systems	4

Electives

Code	Title	Hours
Complete three of the following:		12
MISM 2510	Fundamentals of Information Analytics	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MGMT 4410	Human Resources and Workforce Analytics	
MKTG 3501	Marketing Analytics	
IS 1500	Introduction to Web Development	
SCHM 3308	Supply Chain Analytics	

GPA Requirement

2.000 GPA required in the minor

Emerging Markets, Minor

The minor in emerging markets introduces students to the challenges and opportunities that face companies in countries that are rapidly developing into more developed world economies. Students have an opportunity to combine course work that explores the dynamics of conducting business and generating innovations in emerging markets with a summer field project on-site in an area of the world where markets are rapidly developing. This interdisciplinary minor is open to business and nonbusiness students.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Emerging Markets

Code	Title	Hours
INTB 2501	Competing to Win in Emerging Markets	4

Field Research

Code	Title	Hours
INTB 3316 and INTB 3318	Economic, Social, and Political Dimensions of Doing Business in Brazil and Field Research in Emerging Markets in Brazil	8

Please note: Additional research courses may be accepted with approval from the undergraduate dean's office.

Electives

Code	Title	Hours
Complete two of the following:		8
AFRS 1101	Introduction to African Studies	
ANTH 2305	Global Markets and Local Culture	
ASNS 1150	East Asian Studies	
CLTR 1500 or HIST 1500	Modern Chinese History and Culture	

CLTR 1505	Introduction to Latin American Culture
COMM 2303	Global and Intercultural Communication
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 3405	International Political Economy
POLS 3407	International Organizations
POLS 3487	Politics of Developing Nations

GPA Requirement

2.000 GPA required in the minor

Entrepreneurship, Minor

This five-course (20 credit) Interdisciplinary minor guides students through the startup process. Students are exposed to innovation, marketing, and business modeling and given the opportunity to develop prototypes for their new ideas. They will then work in interdisciplinary teams to develop business plans. Support is provided to help students advance their ventures through IDEA, the venture incubator.

Depending on the participating college, one or two courses have been carefully selected as substitutes for D'Amore-McKim School of Business courses, allowing a student to apply the same course to both his or her own college degree and our entrepreneurship minor. We currently have partnerships with CAMD, COE, CCIS, Bouvé, and COS. This allows students to learn entrepreneurship from business school professors while at the same time innovate and prototype new products and systems within their area's faculty. This powerful combination leads to exciting new ventures.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: This minor is not available to students in the D'Amore-McKim School of Business.

Required Course

Code	Title	Hours
Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	

Electives

Code	Title	Hours
A minimum of two courses must be ENTR courses.		
Complete four of the following:		16
ENTR 1201	The Entrepreneurial Universe	
ENTR 2301	Innovation!	
ENTR 2303	Entrepreneurial Marketing and Selling	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	

ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 4510	Management Consulting Abroad
CS 4500	Software Development
CS 4520	Mobile Application Development
CS 4550	Web Development
ARTG 1250	Design Process Context and Systems
ARTG 3462	Experience Design 1
GAME 2010	The Business of Games
GE 1110	Engineering Design (engineering students only)
GE 5100	Product Development for Engineers (engineering students only)

GPA Requirement

2.000 GPA required in the minor

Global Social Entrepreneurship, Minor

This five-course (20 credits) interdisciplinary minor in global social entrepreneurship (GSE) is administered by the D'Amore-McKim School of Business through its Entrepreneurship and Innovation Group (ENT) in collaboration with the College of Social Sciences and Humanities (CSSH).

The minor consists of three on-campus courses and one two-course Dialogue of Civilizations Program (Dialogue). The minor is open to business and nonbusiness students. Several of the courses included in this minor may also apply to other programs or individual course requirements. Because this minor is interdisciplinary, a student may apply only three courses from any one college toward completion of the minor. For example, after a student completes Global Social Enterprise (ENTR 2206) (a D'Amore-McKim School of Business course) and a D'Amore-McKim School of Business Dialogue, then the remaining two courses must come from CSSH. If, alternatively, a student completes a qualified CSSH Dialogue, then he or she may thereafter take one or two elective courses from the D'Amore-McKim School of Business.

Finally, note that business students can pursue this minor or alternatively choose to pursue the ENT concentration with a track (concentration track) in social entrepreneurship, which requires three ENTR courses in social entrepreneurship and does not require a Dialogue. Students may also choose to pursue both the minor and the ENT concentration.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: No more than three courses may be taken from any one college.

Required Course

Code	Title	Hours
ENTR 2206	Global Social Enterprise	4

Research Courses

Code	Title	Hours
Complete one of the following:		8
ENTR 3306 and ENTR 3308	Global Entrepreneurship and Business Economic History of South Africa	

ENTR 4512 and ENTR 4514	Social Entrepreneurship and Sustainable Development in India and Development Practice and Global Citizenship in India
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HUSV 4945 and HUSV 4866	Leadership and International Program Development and Intercultural Studies through Human Services
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Please note: Additional research courses may be accepted with approval from the undergraduate dean's office.

Electives

Code	Title	Hours
Complete two of the following:		8
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ANTH 2305	Global Markets and Local Culture	
ENTR 3212	Innovation for Social Change	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4506	Advanced Studies in Social Enterprise	
INTL 1101	Globalization and International Affairs	
INTL 3400	International Conflict and Negotiation	
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
POLS 3487	Politics of Developing Nations	
POLS 3406	International Law	

GPA Requirement

2.000 GPA required in the minor

Leadership and Human Capital, Minor

The leadership and human capital minor will deepen students' knowledge and skills that are necessary to attract, retain, develop, lead, and manage employees. Employees of a firm are resources for an employer and based on their expertise provide economic value to a firm. Thus, the effective leadership and management of human capital is instrumental to an organization's success. As organizations are seeking new ways of dealing with problems such as globalization, a weak economy, rapidly changing technology, union-management relations, and changing demographics in the workplace, managers and human resources professionals use a wide range of techniques for handling these and other challenges and ensuring that their employees and organizations are competitive and high performing.

Managing human capital is a significant component of the strategic management of an organization. The courses offered in the leadership and human capital minor will expose students to the major issues and challenges in leading and managing a global and increasingly diverse workforce. The courses address the human capital issues all employees face and offer ways to deal with them.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Please note, only one course in the minor may double count in one of the seven business concentrations.

Organizational Behavior

Code	Title	Hours
ORGB 3201 or ORGB 3209	Organizational Behavior Organizational Behavior	4

Managing Human Capital

Code	Title	Hours
MGMT 3420	Managing Human Capital	4

Electives

Code	Title	Hours
Complete two of the following courses:		8
MGMT 3302	Negotiating in Business	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3350	Managing a Diverse Workforce	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	

GPA Requirement

2.000 GPA required in the minor

Strategy, Minor

The strategy minor is open to undergraduate business students with any major or concentration. The curriculum develops students' ability to assume the role of a general manager and to think constructively about the strategic focus and direction of an organization, as well as its relative competitive strengths and weaknesses. Broad topics include the appropriate criteria and processes for general management decision making, especially under conditions of uncertainty; strategies a firm can follow in order to gain competitive advantage when entering into, competing within, and exiting from individual markets and how these strategies interact when the firm competes in several markets; and the optimal boundaries of the firm—the advantages and disadvantages its unique history and resources give it. The strategy minor may be of particular interest for students who plan to pursue careers in general management, management consulting, new venture management, venture capital, corporate planning, and investment banking.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
STRT 4501 or INTB 4202	Strategy in Action Executing Global Strategy	4

Electives

Code	Title	Hours
Complete three of the following:		12
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
FINA 4420	Mergers and Acquisitions	
INTB 2501	Competing to Win in Emerging Markets	
MKTG 3301	Marketing Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4501 or BUSN 3110	Skills for Managerial Success The Consulting Environment	
SCHM 4401	Advanced Problems in Supply Chain Management	
STRT 4301	Strategic Analysis and Decision Making	

GPA Requirement

2.000 GPA required in the minor

Sustainable Business Practices, Minor

Combining course work and a summer field project, the minor in sustainable business practices seeks to provide students with a deeper understanding of sustainability issues and the tools to address these issues in a business environment. This interdisciplinary minor is open to business and nonbusiness students.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: No more than three courses may be taken from any one college.

Sustainability in Business

Code	Title	Hours
FINA 2720	Sustainability in the Business Environment	4

Field Research

Code	Title	Hours
ENTR 3336 and ENTR 3338	Resource Management and Renewable Energy in Iceland and Field Research in Sustainable Energy in Iceland	8

Note: Additional research courses may be accepted with approval from the undergraduate dean's office.

Electives

Code	Title	Hours
Complete two of the following:		8
CIVE 2334	Environmental Engineering 1	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ENVR 1101	Environmental Science	
ENVR 1112	Environmental Geology	
ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 4515	Sustainable Development	

GE 1201	Alternative Energy Technologies Abroad
PHIL 1180	Environmental Ethics
PHYS 1132	Energy, Environment, and Society
POLS 2395	Environmental Politics and Policy
SOCL 1246	Environment and Society

GPA Requirement

2.000 GPA required in the minor

Accelerated Bachelor/Graduate Degree Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See additional information on PlusOne Bachelor's/Master's programs (<http://www.northeastern.edu/plusone>).

If you have questions regarding specific accelerated programs see the college's Dean's Office.

Programs

Business Administration

- Business Administration, BSBA/Finance, MSF

International Business

- International Business, BSIB/International Management, MS
- International Business, BSIB/Finance, MSF

College of Computer and Information Science

Website (<http://www.ccs.neu.edu/undergraduate>)

Carla E. Brodley, PhD, Dean

Ben Hescott, PhD, Associate Dean of Students

Mark Erickson, MEd, Assistant Dean of Employer Relations

Alan Mislove, PhD, Associate Professor, Associate Dean, and Director of Undergraduate Programs

Karyn Rosen, MEd, Assistant Dean of Cooperative Education

Martin Schedlbauer, PhD, Clinical Professor, Director of Data Science and Information Science Programs

Christo Wilson, PhD, Associate Professor, Director of Cybersecurity Program

202 West Village H

617.373.2462

ccis-advising@northeastern.edu

Computing has transformed the way people work and live, and its applications are limitless. Today, an understanding of computing is critical in business, healthcare, science, digital art, and other areas of our information-driven society. Computing knowledge and computing technology also contribute to resolving major issues in an increasingly complex world.

The College of Computer and Information Science offers undergraduate programs that combine a strong foundation in computing with the opportunity to acquire a deep knowledge of another discipline in which computing plays a critical role. The college offers undergraduate degree programs in computer science (BS and BA), data science (BS), information science (BS), and cybersecurity (BS); combined majors with business administration, cognitive psychology, biology, biochemistry, mathematics, physics, environmental science, health sciences, game development, music composition and technology, linguistics, communication, design, media arts, journalism, criminal justice, economics, English, history, philosophy, political science, and sociology; and a combined major in computer science and information science. The BS in computer science emphasizes strong technical competence in computer science, mathematics, science, and electrical engineering. The BA in computer science combines computer science with a broad-based liberal arts education. The BS in information science integrates studies in computer science, behavioral science, business, and social science. The BS in data science combines computer science, information science, mathematics, statistics, and probability theory into an integrated curriculum. The BS in cybersecurity provides the fundamental knowledge of computer science with an essential focus on experiential learning through security-related courses. The BS in computer science with a concentration in cyber operations extends the regular BS in computer science by requiring a significant number of courses in security and in networks both wired and wireless. This program is one of the initial four programs selected in 2012 by the National Security Agency as a National Center of Academic Excellence in Cyber Operations Program.

Academic Progression Standards

To progress to sophomore standing, students are required to earn:

- A minimum of 25 semester hours of credit
- A minimum overall and CS GPA of 1.800

- A grade of C or higher in First-Year Writing (ENGW 1111) or First-Year Writing for Multilingual Writers (ENGW 1102)

A deficit in any of these criteria after two semesters of enrollment will lead to student dismissal from CCIS and Northeastern.

Additional requirements

- Students are permitted two attempts to earn a minimum grade of C– in the following courses:
 - Discrete Structures (CS 1800)
 - Fundamentals of Computer Science 1 (CS 2500)
 - Fundamentals of Computer Science 2 (CS 2510)
- If a C– is not earned by the second attempt, a student will be dismissed from CCIS and Northeastern.
- If the following courses are required by the degree program, a minimum grade of C– is required:
 - Calculus for Business and Economics (MATH 1231)
 - Calculus and Differential Equations for Biology 1 (MATH 1251)
 - Calculus and Differential Equations for Biology 2 (MATH 1252)
 - Intensive Calculus for Engineers (MATH 1340)
 - Calculus 1 for Science and Engineering (MATH 1341)
 - Calculus 2 for Science and Engineering (MATH 1342)

Maintaining good standing

To remain in good academic standing and progress after the first year, students are required to fulfill:

- A minimum of 12 SH in each full-term semester (fall or spring)
- A minimum overall GPA of 2.000
- A minimum GPA of 2.000 in all CS/IS/DS courses
- A minimum GPA of 2.000 for business courses in the combined CS and business, IS and business, and cybersecurity and business majors (or the business portion of the combined major will be dropped)

Program Length

The College of Computer and Information Science prides itself on flexibility and a very supportive advising staff. Depending upon the number of entry-level/transfer credits, the academic program, and student planning, it is possible to complete the program within four years with at least one experiential experience and usually with two such experiences.

Computer Science

Computer science involves the application of theoretical concepts in the context of software development to the solution of problems that arise in almost every human endeavor. Computer science as a discipline draws its inspiration from mathematics, logic, science, and engineering. From these roots, computer science has fashioned paradigms for program structures, algorithms, data representations, efficient use of computational resources, robustness and security, and communication within computers and across networks. The ability to frame problems, select computational models, design program structures, and develop

efficient algorithms is as important in computer science as software implementation skill. Computer science is concerned with bringing together all of the intellectual resources needed to enable the rapid and effective development of software to meet the needs of business, research, and end users.

The goal of the undergraduate program in computer science is to teach students the conceptual and practical skills that will enable them to contribute to the development of computational principles and to play a productive role in the software community. To that end, the undergraduate program focuses on the fundamentals of program design including object-oriented design, software development, computer organization, systems and networks, theory of computation, principles of languages, and advanced algorithms and data. The program also offers a variety of electives at the upper undergraduate and beginning graduate levels ranging from more theoretical courses to those that focus on important applications.

The Bachelor of Science in Computer Science with Concentration in Cyber Operations is one of the initial four programs selected in 2012 by the National Security Agency as a National Center of Academic Excellence in Cyber Operations Program.

Programs

Bachelor of Science in Computer Science (BSCS)

- Computer Science (p. 269)
- Computer Science with Concentration in Cyber Operations (p. 272)

Bachelor of Arts in Computer Science (BACS)

- Computer Science (p. 274)

Bachelor of Science (BS)

- Cybersecurity (p. 276)

Minor

- Computer Science (p. 279)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 367)

Computer Science, BSCS

The Bachelor of Science in Computer Science focuses on the fundamentals of program design, software development, computer organization, systems and networks, theories of computation, principles of languages, and advanced algorithms and data. The bachelor's degree in computer science is also offered with a concentration in cyber operations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 3800	Theory of Computation	4
CS 4400	Programming Languages	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1
Computer Science Capstone		
Complete one of the following:		4-5
CS 4100	Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4410	Compilers	
CS 4150	Game Artificial Intelligence	
CS 4550	Web Development	
CS 4991	Research	
IS 4900	Information Science Senior Project	
Computer Science Elective Courses		
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 8 credits of CS, IS or DS classes that are not already required. Choose courses within the following ranges:		8
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		
Supporting Courses		
Code	Title	Hours
Mathematics Courses		
MATH 1341	Calculus 1 for Science and Engineering (a grade of C– or higher is required)	4

MATH 1342	Calculus 2 for Science and Engineering (a grade of C– or higher is required)	4
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MATH 2331	Linear Algebra	4
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MATH 3081	Probability and Statistics	4
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Computing and Social Issues

Complete one of the following:		4
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ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
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IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
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INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
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PHIL 1145	Technology and Human Values	
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SOCL 1280	The 21st-Century Workplace	
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SOCL 3485	Environment, Technology, and Society	
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SOCL 4528	Computers and Society	
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Electrical Engineering

EECE 2160	Embedded Design: Enabling Robotics	4
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Science Requirement

Complete two courses for one of the following science categories:		10
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Biology

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
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Then complete one of the following:

BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	
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BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	
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Chemistry

CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
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CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	
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Geology/Environmental Science (Option 1)

ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	
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ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	
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Geology/Environmental Science (Option 2)

ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	
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Then complete one of the following:

ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	
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ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	
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ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
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ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
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Geology/Environmental Science (Option 3)

ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	
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ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
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Physics

Complete one of the following sequences:

Sequence A

PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
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PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
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Sequence B

PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
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PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
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Sequence C

PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	
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PHYS 1165 and PHYS 1166 and PHYS 1167	Physics 2 and Lab for PHYS 1165 and Recitation for PHYS 1165	
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Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
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Required General Electives

Code	Title	Hours
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Complete eight general electives.		32
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Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science Credit Requirements

Complete 60 semester hours in the major. Acceptable courses for this requirement include all CS courses (except CS 5010) and IS 2000 and higher (except IS 4900).

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

135 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Elective	4
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	Elective	4	MATH 1342	4
CS 2500 and CS 2501	5	MATH 1341	4				
ENGW 1111	4	Elective	4				
Elective	4						
19		18		8		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3650	4	Co-op		Co-op		MATH 3081	4
CS 3000	4					Elective	4
Elective	4						
Elective	4						
CS 1210	1						
17		0		0		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3700	4	Co-op		Co-op		MATH 2331	4
CS 3800	4					ENGW 3302	4
Science elective with lab	5						
THTR 1170	1						
Computing and social issues	4						
18		0		0		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4400	4	CS 4500 and CS 4501	4				
EECE 2160	4	Computer science capstone	4				
Science elective with lab	5	Elective	4				
Computer science elective	4	Computer science elective	4				
17		16					

Total Hours: 137

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5				
CS 2500 and CS 2501	5	Elective	4				
ENGW 1111	4	Elective	4				
Elective	4						
19		18		0		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op		0 Co-op		0 Vacation	0
MATH 1341	4						
CS 3000	4						
Elective	4						
CS 1210	1						
17		0		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op		0 Co-op		0 MATH 2331	4
CS 3650	4					Elective	4
MATH 1342	4						
Science elective with lab	5						
THTR 1170	1						
18		0		0		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3700	4	Co-op		0 Co-op		0 Elective	4
MATH 3081	4					Elective	4
ENGW 3302	4						
Science elective with lab	5						
17		0		0		8	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4400	4	CS 4500 and CS 4501	4				
EECE 2160	4	Computing and social issues	4				
CS undergraduate elective	4	Capstone	4				
CS undergraduate elective	4	Elective	4				
16		16					

Total Hours: 137

Computer Science with Concentration in Cyber Operations, BSCS

The Bachelor of Science in Computer Science with Concentration in Cyber Operations focuses on the fundamentals of program design, software development, computer organization, systems and networks, theories of computation, principles of languages, and advanced algorithms and data, along with a particular focus on cyber operations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science/Cyber Operations Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802 or CS 1801	Discrete Structures and Seminar for CS 1800 and Recitation for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 3800	Theory of Computation	4
CS 4400	Programming Languages	4
CS 4500	Software Development	4
Computer Science Seminar		
THTR 1170	The Eloquent Presenter	1
Computer Science Capstone		
Complete one of the following:		4-5
CS 4100	Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4410	Compilers	

CS 4150	Game Artificial Intelligence	
CS 4550	Web Development	
CS 4991	Research	
IS 4900	Information Science Senior Project	

Required Courses for Cyber Operations Concentration

CS 4700	Network Fundamentals	4
CS 4740	Network Security	4
CS 5770	Software Vulnerabilities and Security	4
CS 6710	Wireless Network	4
IA 5010	Foundations of Information Assurance	4

Supporting Courses

Code	Title	Hours
Mathematics Courses		
MATH 1341	Calculus 1 for Science and Engineering (a grade of C– or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C– or higher is required)	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	
Electrical Engineering		
EECE 2160	Embedded Design: Enabling Robotics	4
Science Requirement		
Complete two courses for one of the following sciences:		10
<i>Biology</i>		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
Then complete one of the following:		
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	
<i>Chemistry</i>		
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	
<i>Geology/Environmental Science (Option 1)</i>		
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	

Geology/Environmental Science (Option 2)

ENVR 1200 Dynamic Earth
and ENVR 1201 and Lab for ENVR 1200

Then complete one of the following:

ENVR 2310 Earth Materials
and ENVR 2311 and Lab for ENVR 2310

ENVR 2340 Earth Landforms and Processes
and ENVR 2341 and Lab for ENVR 2340

ENVR 3300 Geographic Information Systems
and ENVR 3301 and Lab for ENVR 3300

ENVR 4500 Applied Hydrogeology
and ENVR 4501 and Lab for ENVR 4500

Geology/Environmental Science (Option 3)

ENVR 1202 History of Earth and Life
and ENVR 1203 and Interpreting Earth History

ENVR 5242 Ancient Marine Life
and ENVR 5243 and Lab for ENVR 5242

Physics

Complete one of the following sequences:

Sequence A

PHYS 1145 Physics for Life Sciences 1
and PHYS 1146 and Lab for PHYS 1145

PHYS 1147 Physics for Life Sciences 2
and PHYS 1148 and Lab for PHYS 1147

Sequence B

PHYS 1151 Physics for Engineering 1
and PHYS 1152 and Lab for PHYS 1151
and PHYS 1153 and Interactive Learning Seminar for
PHYS 1151

PHYS 1155 Physics for Engineering 2
and PHYS 1156 and Lab for PHYS 1155
and PHYS 1157 and Interactive Learning Seminar for
PHYS 1155

Sequence C

PHYS 1161 Physics 1
and PHYS 1162 and Lab for PHYS 1161
and PHYS 1163 and Recitation for PHYS 1161

PHYS 1165 Physics 2
and PHYS 1166 and Lab for PHYS 1165
and PHYS 1167 and Recitation for PHYS 1165

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science Credit Requirement

Complete 72 semester hours in the major. Acceptable courses for this requirement include all CS courses (except Programming Design Paradigm (CS 5010)), all IS courses (except Information Science Senior Project (IS 4900)), all DS courses, and Foundations of Information Assurance (IA 5010).

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

135 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	CS 3000	4
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	Elective	4	MATH 1342	4
CS 2500 and CS 2501	5	MATH 1341	4				
ENGW 1111	4	Elective	4				
Elective	4						
		19		18		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op		Co-op		MATH 3081	4
CS 3650	4					Elective	4
Science elective with lab	5						
Elective	4						
CS 1210	1						
		18		0		0	
						8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3700	4	Co-op		Co-op		Science elective with lab	4
CS 4400	4					MATH 2331	4
ENGW 3302	4						
IA 5010	4						
THTR 1170	1						
		17		0		0	
						4	

Year 4

Fall	Hours	Spring	Hours
CS 4700	4	CS 4500	4
CS 4740	4	CS 6710	4
CS 5770	4	Computer science capstone	4
EECE 2160	4	Computing and social issues	4
		16	16

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5				
CS 2500 and CS 2501	5	Elective	4				
ENGW 1111	4	Elective	4				
Elective	4						
		19	18	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
CS 3650	4						
MATH 1341	4						
CS 1210	1						
Elective	4						
		17	0	0	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	MATH 2331	4
CS 3700	4					Elective	4
MATH 1342	4						
Science elective with lab	5						
THTR 1170	1						
		18	0	0	0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op	0	Co-op	0	MATH 3081	4
CS 4400	4					ENGW 3302	4
CS 4700	4						
Science elective with lab	5						
		17	0	0	0		8

Year 5

Fall	Hours	Spring	Hours
CS 4740	4	CS 4500	4
Computing and social issues		CS 5770	4
IA 5010	4	CS 6710	4
EECE 2160	4	Capstone	4
		12	16

Total Hours: 133

Computer Science, BACS

The Bachelor of Arts in Computer Science offers a similar curriculum to the BS, with slightly fewer CS requirements to allow students to study a foreign language and have a wider choice of electives.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Requirements for BA

All BA students are required to complete the BA requirements (p. 40).

Computer Science Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 3800	Theory of Computation	4

CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
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Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Capstone

Complete one of the following: 4-5

CS 4100	Artificial Intelligence	
CS 4150	Game Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4410	Compilers	
CS 4550	Web Development	
CS 4991	Research	
IS 4900	Information Science Senior Project	

Computer Science Elective Courses

With advisor approval, directed study, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 4 credits that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		
MATH 2321	Calculus 3 for Science and Engineering	
MATH 2331	Linear Algebra	
MATH 3000 to MATH 4581 but not MATH 4025		

Supporting Courses

Code	Title	Hours
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Mathematics Courses

MATH 1341	Calculus 1 for Science and Engineering (a grade of C- or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C- or higher is required)	4
MATH 3081	Probability and Statistics	4

Science Courses

Complete one course from one of the following groups: 5

Biology

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
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Chemistry

CHEM 1101 and CHEM 1102 and CHEM 1103	General Chemistry for Health Sciences and Lab for CHEM 1101 and Recitation for CHEM 1101	
CHEM 1151 and CHEM 1152 and CHEM 1153	General Chemistry for Engineers and Lab for CHEM 1151 and Recitation for CHEM 1151	

Geology

ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	

Physics

PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
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PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
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PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
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Complete 10 general electives. 40

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

134 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Spring/Summer 1

Year 1				
Fall	Hours Spring	Hours Summer 1	Hours Summer 2	Hours
CS 1200	1 CS 2510 and CS 2511	5 CS 3500	4 MATH 1341	4

CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	Elective	4	Elective	4
CS 2500 and CS 2501	5	Foreign language course	4				
ENGW 1111	4	Elective	4				
Foreign language course	4						
	19		18		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3650	4	Co-op		Co-op		MATH 1342	4
CS 3000	4					Elective	4
Elective	4						
Linked language course	4						
CS 1210	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3700	4	Co-op		Co-op		MATH 3081	4
CS 3800	4					Elective	4
Elective	4						
Science course with lab	5						
THTR 1170	1						
	18		0		0		8

Year 4

Fall	Hours	Spring	Hours
CS or MATH elective	4	CS 4500 and CS 4501	4
Computing and social issues course	4	Computer science capstone	4
ENGW 3302	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 136

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	5	Vacation	0
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5				
CS 2500 and CS 2501	5	Foreign language course	4				
ENGW 1111	4	Elective	4				

Foreign language course	4				
	19		18		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op		Co-op		Vacation	0
MATH 1341	4						
CS 3000	4						
CS 1210	1						
Foreign language course	4						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3650	4	Co-op		Co-op		Elective	4
CS 3800	4					Elective	4
MATH 1342	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3700	4	Co-op		Co-op		Elective	4
MATH 3081	4					Elective	4
ENGW 3302	4						
Elective	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
Computing and social issues	4	THTR 1170	1
CS or MATH elective	4	CS 4500 and CS 4501	4
Science elective with lab	5	Capstone	4
Elective	4	Elective	4
		Elective	4
	17		17

Total Hours: 136

Cybersecurity, BS

The Bachelor of Science in Cybersecurity teaches students the conceptual and practical skills that will enable them to contribute to ensuring the reliability and security of cyberspace. The program will provide students with the fundamental knowledge of computer science that forms the technical foundation of the field, with an essential focus on experiential learning through laboratory exercises in the security-related courses, as well as through the co-op program. The program's holistic view of cybersecurity gives it a strong interdisciplinary focus, teaching students how social behavior, policy, and legal rules can affect cybersecurity and the tools of information technology.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 3800	Theory of Computation	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Cybersecurity Required Courses

CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
or IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
CS 4740	Network Security	4
CS 4770	Cryptography	4
CS 4930	Cybersecurity Capstone	4
or CS 4940	Research Projects on National Security	

Cybersecurity Electives

If courses require prerequisites, those should be taken using general electives.

Complete five courses from the following, at least one of which must come from the cybersecurity and social issues elective list: 20-22

CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	
CS 4710	Mobile and Wireless Systems	

or CS 6710	Wireless Network	
CS 5770	Software Vulnerabilities and Security	
CS 4400	Programming Languages	
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4240	Large-Scale Parallel Data Processing	
DS 4300	Large-Scale Information Storage and Retrieval	
DS 4400	Machine Learning and Data Mining 1	
IA 5200	Security Risk Management and Assessment	
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210	
IS 4300	Human Computer Interaction	
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 3324	Computer Architecture and Organization	
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534	
MATH 3527	Number Theory 1	
MATH 4575	Introduction to Cryptography	
MISM 2301	Management Information Systems	
or MISM 2309	Management Information Systems	

Cybersecurity and Social Issues Elective List

COMM 2551	Free Speech in Cyberspace	
CRIM 2200	Criminology	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 4040	Crime Prevention	
LPSC 1101	Introduction to Law	
LPSC 2301	Introduction to Law, Policy, and Society	
LPSC 3303	Topics in Law and Public Policy	
POLS 2390	Science, Technology, and Public Policy	
POLS 3307	Public Policy and Administration	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	

Concentration in Cyber Operations (Optional)

Code	Title	Hours
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Cyber Operations Required Courses

CS 4710	Mobile and Wireless Systems	4
CS 5770	Software Vulnerabilities and Security	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4

Electives

Complete two of the following: 8

CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4240	Large-Scale Parallel Data Processing	
EECE 3324	Computer Architecture and Organization	

EECE 4534	Microprocessor-Based Design
IA 5200	Security Risk Management and Assessment
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210

Supporting Courses

Code	Title	Hours
Electrical Engineering Required Course		
EECE 2160	Embedded Design: Enabling Robotics	4
Mathematics Courses		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 3081	Probability and Statistics	4

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
	Complete seven general electives.	28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science Credit Requirements

Complete 80 semester hours in the major.

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 semester hours required

Plan of Study

Sample Plan of Study

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation

CS 1800 and CS 1801	4	CS 2550	4	MATH 1342	4
CS 2500 and CS 2501	5	MATH 1341	4		
ENGW 1111	4	General elective 2	4		
General elective 1	4				
	18		17		8

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1210	1	CS 3700	4	ENGW 3302 or 3315	4	Co-op
CS 3650	4	CS 3740	4	MATH 3081	4	
CS 3800	4	CS 4770	4			
CS 3000	4	General elective 4	4			
General elective 3	4	CS 1210	1			
	17		17		8	0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4740	4	General elective 5	4	Co-op
		IA 5240	4	EECE 2160	4	
		Cybersecurity elective	4			
		Cybersecurity elective	4			
	0		16		8	0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		THTR 1170	1	(If needed)		
		CS 4930 or 4940	4	General elective 6	4	
		Cybersecurity elective	4	General elective 7	4	
		Cybersecurity elective	4			
		Cybersecurity elective	4			
	0		17		8	

Total Hours: 134

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510	4	CS 3500	4	Vacation
CS 2500	4	CS 2511	1	MATH 1342	4	
CS 2501	1	CS 2550	4			
ENGW 1111	4	MATH 1341	4			
General elective 1	4	General elective 2	4			
CS 1800	4					
CS 1801	0					
	18		17		8	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 3700	4	Vacation		Co-op	
CS 3650	4	CS 3740	4				
MATH 3081	4	General elective 4	4				
General elective 3	4	General elective 5	4				
THTR 1170	1						
		17	16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4740	4	ENGW 3302	4	Co-op	
		CS 3800	4	General elective 7	4		
		EECE 2160	4				
		General elective 6	4				
		0	16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IA 5240	4	Vacation		Co-op	
		CS 4770	4				
		Cybersecurity elective 1	4				
		Cybersecurity elective 2	4				
		0	16		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4930	4				
		Cybersecurity elective 3	4				
		Cybersecurity elective 4	4				
		Cybersecurity elective 5 / social issues	4				
		0	16				

Total Hours: 132

Computer Science, Minor

A computer science minor is designed to provide the computer science skills and know-how you need to succeed in today's highly digital world. A minor requires completion of five CS courses—more than enough to gain proficiency while easily fitting around your major requirements. No prior programming experience is needed.

Looking to gain technical knowledge that directly applies to your major? Students have the option to pursue a CCIS meaningful minor.

Minor Requirements

Note: CCIS minors are only available to non-CCIS majors; students in CCIS-only or CCIS-combined degrees are not eligible for CCIS minors. A

student may receive at most one CCIS minor, regardless of how many CCIS minors they qualify for.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Electives

Code	Title	Hours
Complete three courses that are not already required in the following ranges:		
CS 2500 to CS 7999 but not CS 5010		
IS 4300	Human Computer Interaction	12
One course from CCIS meaningful minors list (see below).		

CCIS Meaningful Minors

The concept of “CCIS meaningful minors” allows students the chance to personalize a computer or information science minor to meet individual academic needs and interests. Students may take *one elective* related to computation or information from a preapproved list of courses offered across the university rather than from within CCIS. This allows students to integrate the minor with a course in their own major or with a course in another area of interest. Students may of course choose to take all electives in the minor within CCIS if they wish.

Code	Title	Hours
Bouvé Health Sciences		
HINF 5101	Introduction to Health Informatics and Health Information Systems	
HINF 5102	Data Management in Healthcare	
HINF 5300	Personal Health Interface Design and Development	
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	
Arts, Media and Design		
ARTD 2360	Photo Basics	
ARTD 2370	Animation Basics	
ARTD 2380	Video Basics	
ARTG 2260	Programming Basics	
ARTG 2400	Interaction Design 1: Responsive	
ARTG 3250	Physical Computing	
ARTG 3451	Information Design 1	
ARTG 3700	Interaction Design 2: Mobile	
ARTG 4552	Information Design 2	
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5110	Information Design History	
ARTG 5120	Research Methods for Design	
COMM 2105	Social Networks	

JRNL 3610	Digital Storytelling and Social Media
MUST 1220	Introduction to Music Technology
MUST 3421	Digital Audio Processing
Computer and Information Science	
CS 1100	Computer Science and Its Applications
CS 1800	Discrete Structures
IS 1500	Introduction to Web Development
Engineering	
BIOE 2365	Bioengineering Measurement, Experimentation, and Statistics
EECE 2160	Embedded Design: Enabling Robotics
EECE 2322	Fundamentals of Digital Design and Computer Organization
EECE 3324	Computer Architecture and Organization
EECE 4542	Advanced Engineering Algorithms
EECE 5639	Computer Vision
EECE 5640	High-Performance Computing
EECE 5644	Introduction to Machine Learning and Pattern Recognition
Science	
BIOL 2301	Genetics and Molecular Biology
BIOL 3405	Neurobiology
BIOL 5587	Comparative Neurobiology
BINF 6200	Bioinformatics Programming
BINF 6308	Bioinformatics Computational Methods 1
BINF 6309	Bioinformatics Computational Methods 2
CHEM 5638	Molecular Modeling
ENVR 3300	Geographic Information Systems
ENVR 4563	Advanced Spatial Analysis
LING 3450	Syntax
LING 3452	Semantics
MATH 1260	Math Fundamentals for Games
MATH 2331	Linear Algebra
MATH 2341	Differential Equations and Linear Algebra for Engineering
MATH 3530	Numerical Analysis
MATH 4606	Mathematical and Computational Methods for Physics
PHYS 1130	Computing, Data, and Science
PSYC 3452	Sensation and Perception
PSYC 3458	Biological Psychology
PSYC 3464	Psychology of Language
PSYC 3466	Cognition
Social Science and Humanities	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics
ECON 4653	Mathematics for Economics
ENGL 3340	Technologies of Text
PHIL 1105	Science and Pseudoscience
PHIL 1115	Introduction to Logic
PHIL 1145	Technology and Human Values
PHIL 2001	Ethics and Evolutionary Games

PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society
D'Amore-McKim School of Business	
ACCT 3403	Accounting Information Systems
ENTR 4501	Business Planning for Technology Ventures
FINA 4608	Advanced Financial Strategy
MISM 2301	Management Information Systems
MISM 3305	Information Resource Management
MISM 3404	Data Communications
MKTG 3401	Marketing Research
MKTG 3501	Marketing Analytics
MKTG 4508	Digital Marketing
SCHM 2301	Supply Chain and Operations Management
Statistics Courses	
CRIM 3700	Criminal Justice Statistics
ECON 2350	Statistics
ECON 5105	Math and Statistics for Economists
ENVR 2500	Biostatistics
IE 3412	Engineering Probability and Statistics
MATH 2280	Statistics and Software
MATH 2285	Introduction to Multisample Statistics
MATH 3081	Probability and Statistics
MATH 4581	Statistics and Stochastic Processes
MGSC 2301	Business Statistics
PHMD 3450	Research Methodology and Biostatistics
PHTH 2210	Foundations of Biostatistics
POLS 2400	Quantitative Techniques
PSYC 2320	Statistics in Psychological Research
SOCL 2320	Statistical Analysis in Sociology

Credit/GPA Requirement

20 semester hours required
2.000 GPA required in the minor

Information Science

Unlocking the full potential of information technology—ensuring that it serves the goals and needs of users, clients, and society—is a tremendous challenge, one that requires a unique blend of knowledge and skills. The field of information science (IS) focuses on the relationship between computers, the people who use them, and the contexts in which they operate. IS seeks to further our understanding of:

1. information itself: where it comes from, how it is organized, and how it is used;
2. the design of computer applications that are usable, socially acceptable, and achieve the goals for which they were created;
3. the impact of information technology (IT) on human life and work; and

4. how the nature of the information, the goals of the users, and the relevant social policies and laws both influence and are influenced by the technical aspects of computer systems.

Information science majors have an opportunity to acquire a strong technical foundation by taking classes in mathematics, logic, and computer science and to acquire a strong foundation in behavioral science by taking classes in cognitive psychology, economics, and statistics. A course in the principles of information science introduces students to important intellectual frameworks such as decision theory, general systems theory, and social informatics and to topics of current importance such as digital copyright, trusted systems, and Internet privacy policy. Building on these foundations, the IS core develops expertise in the design, development, management, maintenance, and evaluation of large-scale information technology systems. Elective courses cover topics such as software project management, text/hypertext retrieval and data mining, social information systems, health informatics, ubiquitous computing, artificial intelligence, information security, and e-commerce.

Programs

Bachelor of Science in Information Science (BSIS)

- Information Science (p. 281)

Minor

- Information Science (p. 283)

Information Science, BSIS

The program combines concepts and skills from computer science, behavioral and social sciences, and system design into an integrated curriculum that is focused on people. The course work covers information architecture; information system design and development; programming and software design; database design; systems and networks; information resource management; social informatics; quantitative and qualitative research methods; and human computer interaction.

Although there is no sharp boundary between computer science and information science, it may be said that CS is concerned with building the software and services infrastructure used by people and organizations worldwide, whereas IS is concerned with the information and software needs of a particular business, healthcare provider, government agency, or nonprofit.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Common Computer and Information Science Curriculum

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C- is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
Computing and Social Issues		
Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Common Information Science Curriculum

Code	Title	Hours
Information Science Foundations		
CS 3200	Database Design	4
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
Human Computer Interaction		
IS 4300	Human Computer Interaction	4
PSYC 1101	Foundations of Psychology	4
Research and Data Analysis		
PSYC 2320 or ECON 2350	Statistics in Psychological Research or Statistics	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project	5

Information Science Concentrations

Complete one of the following concentrations:

- Information Systems Management (p. 282)
- Human Computer Interaction (p. 282)
- Research and Data Analysis (p. 282)

Computer Science or Information Science Electives

Code	Title	Hours
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		8
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete nine general electives.		

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Information Science Major Credit Requirement

Complete 73 semester hours in CS and IS for the major.

Program Requirement

132 total semester hours required

Concentrations

CONCENTRATION IN INFORMATION SYSTEMS MANAGEMENT

Code	Title	Hours
Complete three of the following:		12
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4550	Web Development	
MISM 4501	Business Systems Integration	
ORGB 3201 or ORGB 3209	Organizational Behavior	

CONCENTRATION IN HUMAN COMPUTER INTERACTION

Code	Title	Hours
Complete three of the following:		12
PSYC 3466	Cognition	
CS 4100	Artificial Intelligence	
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4520	Mobile Application Development	
CS 4550	Web Development	
CS 6120	Natural Language Processing	

DS 4200	Information Presentation and Visualization
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CONCENTRATION IN RESEARCH AND DATA ANALYSIS

Code	Title	Hours
Complete three of the following:		12
IS 4200	Information Retrieval	
CS 4100	Artificial Intelligence	
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 6120	Natural Language Processing	
DS 4000 or higher		

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	CS 3000	4
CS 1800 and CS 1802	5	CS 3200	4	Elective	4		
CS 2500 and CS 2501	5	ECON 2350 or PSYC 2320	4				
ENGW 1111	4	Elective	4				
PSYC 1101	4						
19		17		8		4	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Elective	4	Co-op	
IS 4300	4	CS 3650	4	Elective	4		
Elective	4	IS concentration elective	4				
Elective	4	CS/IS concentration elective	4				
		CS 1210	1				
16		17		8		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4800	4	ENGW 3302	4	Co-op	
		CS 3700	4	Elective	4		
		IS concentration elective	4				
		Elective	4				
0		16		8		0	
Year 4							
Fall	Hours	Spring	Hours				
Co-op		IS 4900	5				
		CS/IS concentration elective	4				

IS concentration elective	4	
Computing and social issues	4	
Elective	4	
	0	21

Total Hours: 134

IS concentration course	4	
Elective	4	
Computing and social issues	4	
	0	17

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	ECON 2350 or PSYC 2320	4				
ENGW 1111	4	Elective	4				
PSYC 1101	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Elective		Co-op	
CS 3500	4	IS 4300	4	Elective		4	
Elective	4	CS 3000	4				
Elective	4	Elective	4				
		CS 1210	1				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4800	4	ENGW 3302	4	Co-op	
		IS concentration course	4	Elective	4		
		CS 3650	4				
		CS/IS concentration elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 2	Hours
Co-op		CS 3700	4	Co-op	
		CS/IS concentration elective	4		
		IS concentration course	4		
		Elective	4		
	0		16		0

Year 5

Fall	Hours	Spring	Hours
Co-op		IS 4900	5

Information Science, Minor

CCIS minors provide the computer science skills and know-how you need to succeed in today's highly digital world. A minor requires completion of five CS courses—more than enough to gain proficiency while easily fitting around your major requirements. All with no prior programming experience needed. Looking to gain technical knowledge that directly applies to your major? You have the option to pursue a CCIS meaningful minor for both CS and IS.

Minor Requirements

Note: CCIS minors are only available to non-CCIS majors; students in CCIS-only or CCIS-combined degrees are not eligible for CCIS minors. A student may receive at most one CCIS minor, regardless of how many CCIS minors they qualify for.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Computer Science Fundamental Courses		
A grade of C- or higher is required in computer science fundamental courses.		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Information Science Required Course		
IS 2000	Principles of Information Science	4

Information Science Electives

Code	Title	Hours
Complete two from the following:		
IS 1500	Introduction to Web Development	8
IS 2000 to IS 4989		
CS 3200	Database Design	
One course from CCIS meaningful minors (see below)		

CCIS Meaningful Minors

The concept of "CCIS Meaningful Minors" allows students the chance to personalize a computer or information science minor to meet individual academic needs and interests. Students may take *one elective* related to computation or information from a preapproved list of courses offered across the university rather than from within CCIS. This allows students to integrate the minor with a course in their own major or with a course in another area of interest. Students may of course choose to take all electives in the minor within CCIS if they wish.

Code	Title	Hours		
Bouvé Health Sciences			LING 3450	Syntax
HINF 5101	Introduction to Health Informatics and Health Information Systems		LING 3452	Semantics
HINF 5102	Data Management in Healthcare		MATH 1260	Math Fundamentals for Games
HINF 5300	Personal Health Interface Design and Development		MATH 2331	Linear Algebra
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation		MATH 2341	Differential Equations and Linear Algebra for Engineering
Arts, Media and Design			MATH 3530	Numerical Analysis
ARTD 2360	Photo Basics		MATH 4606	Mathematical and Computational Methods for Physics
ARTD 2370	Animation Basics		PHYS 1130	Computing, Data, and Science
ARTD 2380	Video Basics		PSYC 3452	Sensation and Perception
ARTG 2260	Programming Basics		PSYC 3458	Biological Psychology
ARTG 2400	Interaction Design 1: Responsive		PSYC 3464	Psychology of Language
ARTG 3250	Physical Computing		PSYC 3466	Cognition
ARTG 3451	Information Design 1		Social Science and Humanities	
ARTG 3700	Interaction Design 2: Mobile		ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics
ARTG 4552	Information Design 2		ECON 4653	Mathematics for Economics
ARTG 5100	Information Design Studio 1: Principles		ENGL 3340	Technologies of Text
ARTG 5110	Information Design History		PHIL 1105	Science and Pseudoscience
ARTG 5120	Research Methods for Design		PHIL 1115	Introduction to Logic
COMM 2105	Social Networks		PHIL 1145	Technology and Human Values
JRNL 3610	Digital Storytelling and Social Media		PHIL 2001	Ethics and Evolutionary Games
MUST 1220	Introduction to Music Technology		PHIL 4510	Philosophy of Science
MUST 3421	Digital Audio Processing		PHIL 4515	Advanced Logic
Computer and Information Science			SOCL 3485	Environment, Technology, and Society
CS 1100	Computer Science and Its Applications		SOCL 4528	Computers and Society
CS 1800	Discrete Structures		D'Amore-McKim School of Business	
IS 1500	Introduction to Web Development		ACCT 3403	Accounting Information Systems
Engineering			ENTR 4501	Business Planning for Technology Ventures
BIOE 2365	Bioengineering Measurement, Experimentation, and Statistics		SCHM 2301	Supply Chain and Operations Management
EECE 2160	Embedded Design: Enabling Robotics		FINA 4608	Advanced Financial Strategy
EECE 2322	Fundamentals of Digital Design and Computer Organization		MISM 2301	Management Information Systems
EECE 3324	Computer Architecture and Organization		MISM 3305	Information Resource Management
EECE 4542	Advanced Engineering Algorithms		MISM 3404	Data Communications
EECE 5639	Computer Vision		MKTG 3401	Marketing Research
EECE 5640	High-Performance Computing		MKTG 3501	Marketing Analytics
EECE 5644	Introduction to Machine Learning and Pattern Recognition		MKTG 4508	Digital Marketing
Science			Statistics Courses	
BIOL 2301	Genetics and Molecular Biology		CRIM 3700	Criminal Justice Statistics
BIOL 3405	Neurobiology		ECON 2350	Statistics
BIOL 5587	Comparative Neurobiology		ECON 5105	Math and Statistics for Economists
BINF 6200	Bioinformatics Programming		ENVR 2500	Biostatistics
BINF 6308	Bioinformatics Computational Methods 1		IE 3412	Engineering Probability and Statistics
BINF 6309	Bioinformatics Computational Methods 2		MATH 2280	Statistics and Software
CHEM 5638	Molecular Modeling		MATH 2285	Introduction to Multisample Statistics
ENVR 3300	Geographic Information Systems		MATH 3081	Probability and Statistics
ENVR 4563	Advanced Spatial Analysis		MATH 4581	Statistics and Stochastic Processes
			MGSC 2301	Business Statistics
			PHMD 3450	Research Methodology and Biostatistics
			PHTH 2210	Foundations of Biostatistics

POLS 2400	Quantitative Techniques
PSYC 2320	Statistics in Psychological Research
SOCL 2320	Statistical Analysis in Sociology

GPA Requirement

20 semester hours required
2.000 GPA required in the minor

Data Science

The Bachelor of Science in Data Science studies the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data from small to large volumes. The program combines computer science, information science, mathematics, statistics, and probability theory into an integrated curriculum that prepares students for careers or graduate studies in big data analysis, data science, and data analytics. The course work covers exploratory data analysis, data manipulation in a variety of programming languages, large-scale data storage, predictive analytics, machine learning, data mining, and information visualization and presentation. Data science has emerged as a discipline due to the confluence of two major events:

1. The ability to collect, store, prune, process, and transmit large amounts of data in the cloud, and
2. The convergence of programming, statistics, artificial intelligence, and visualization as complementary tools for the analysis and understanding of data.

Programs

Bachelor of Science (BS)

- Data Science, BS (p. 285)
- Data Science, Minor (p. 287)

Data Science, BS

The Bachelor of Science in Data Science studies the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data from small to large volumes.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Data Science Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1

CS 1210	Professional Development for CCIS Co-op	1
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Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

IS 2000	Principles of Information Science	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3520	Programming in C++	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Mathematics Foundations

MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4

Statistics Foundations

Complete one of the following:		4
ECON 2350	Statistics	
ENVR 2500	Biostatistics	
MATH 3081	Probability and Statistics	
PSYC 2320	Statistics in Psychological Research	

Data Science Required Courses

DS 4100	Data Collection, Integration, and Analysis	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4
DS 4420	Machine Learning and Data Mining 2	4
DS 4900	Data Science Senior Project	4

Data-Science-Related Electives

Complete six courses from the categories A and B, at least three of which must be from Category B.

Category A: Data-Science-Related Electives in Computer and Information Science

IS 3500	Information System Design and Development	
IS 4200	Information Retrieval	
IS 4300	Human Computer Interaction	
IS 4800	Empirical Research Methods	
CS 3000	Algorithms and Data	
CS 3740	Systems Security	
CS 4100	Artificial Intelligence	
CS 4120	Natural Language Processing	
CS 4240	Large-Scale Parallel Data Processing	
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	
CS 4550	Web Development	

CS 6140	Machine Learning
CS 6220	Data Mining Techniques
<i>Category B: Data-Science-Related Electives in Other Units</i> ¹	
ARTG 3451	Information Design 1
ARTG 4552	Information Design 2
ARTG 5100	Information Design Studio 1: Principles
ARTG 5110	Information Design History
ARTG 5120	Research Methods for Design
ARTG 5330	Visualization Technologies 1
ARTG 6100	Information Design Studio 2: Dynamic Mapping and Models
ARTG 6200	Information Design Studio 3: Synthesis
BINF 6308	Bioinformatics Computational Methods 1
BINF 6309	Bioinformatics Computational Methods 2
ECON 2560	Applied Econometrics
EECE 4542	Advanced Engineering Algorithms
EECE 5639	Computer Vision
EECE 5642	Data Visualization
EECE 5644	Introduction to Machine Learning and Pattern Recognition
FINA 4608	Advanced Financial Strategy
GSND 5110	Game Design and Analysis
GSND 6350	Data-Driven Player Modeling
HINF 5101	Introduction to Health Informatics and Health Information Systems
HINF 5102	Data Management in Healthcare
HINF 5300	Personal Health Interface Design and Development
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation
IA 5010	Foundations of Information Assurance
IA 5200	Security Risk Management and Assessment
IE 5640	Data Mining for Engineering Applications
ECON 2350	Statistics
ENVR 2500	Biostatistics
MATH 2331	Linear Algebra
MATH 3081	Probability and Statistics
MATH 4581	Statistics and Stochastic Processes
MISM 3305	Information Resource Management
MISM 3403	Data Management in the Enterprise
MKTG 3401	Marketing Research
MKTG 3501	Marketing Analytics
PSYC 2320	Statistics in Psychological Research

¹ The statistics course options under Mathematics and Statistics Foundations are also listed here as Data-Science-Related Electives. A student is permitted to take at most one additional statistics course to see statistics from the perspective of a different department.

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and DS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	
CS 1800 and CS 1802	5	IS 2000	4	CS 3500	4	
CS 2500 and CS 2501	5	MATH 1342	4			
ENGW 1111	4	Elective	4			
MATH 1341	4					
		19	17		8	
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3520	4	DS 4200	4	ENGW 3302	4	Co-op
DS 4100	4	DS 4300	4	Elective	4	
Statistics course	4	Elective	4			
Elective	4	Elective	4			
		CS 1210	1			
		16	17		8	
					0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		DS 4400	4	Co-op		Co-op	
		Data science elective	4				
		Data science elective	4				
		Elective	4				
		THTR 1170	1				
		0	17			0	0

Year 4			
Fall	Hours	Spring	Hours
Data science elective	4	DS 4420	4
Data science elective	4	DS 4900	4
Data science elective	4	Data science elective	4
Elective	4	Elective	4
		16	16

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	IS 2000	4				
CS 2500 and CS 2501	5	MATH 1342	4				
MATH 1341	4	Elective	4				
ENGW 1111	4						
		19	17			0	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3200	4	CS 1210	1	Vacation		Co-op	
CS 3500	4	CS 3520	4				
DS 4100	4	DS 4200	4				
Statistics	4	DS 4300	4				
		Elective	4				
		16	17			0	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		DS 4400	4	ENGW 3302	4	Co-op	
		DS-related elective	4	Elective	4		
		DS-related elective	4				
		Elective	4				
		THTR 1170	1				
		0	17			8	0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		DS 4420	4	Elective	4	Co-op	
		DS-related elective	4	Elective	4		
		DS-related elective	4				
		Elective	4				
		0	16			8	0

Year 5			
Fall	Hours	Spring	Hours
Co-op		DS 4900	4
		DS-related elective	4
		DS-related elective	4
		Elective	4
		0	16

Total Hours: 134

Data Science, Minor

The minor in data science studies the collection, manipulation, storage, retrieval, and computational analysis of data in its various forms, including numeric, textual, image, and video data from small to large volumes.

Minor Requirements

Note: CCIS minors are only available to non-CCIS majors; students in CCIS-only or CCIS-combined degrees are not eligible for CCIS minors. A student may receive at most one CCIS minor, regardless of how many CCIS minors they qualify for.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Computer Science Fundamental Courses		
A grade of C- or higher is required in computer science fundamental courses.		
Complete one of the following options:		5-10
<i>Fundamentals of Computer Science Option</i>		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	
<i>Programming with Data Option</i>		
DS 2000 and DS 2001	Programming with Data and Practicum for DS 2000	
Data Science Required Course		
DS 4100	Data Collection, Integration, and Analysis	4

Data Science Electives

Code	Title	Hours
Complete three of the following. Only one course from the Meaningful Minor list may contribute toward the minor requirements:		
DS 2010 to DS 4989		12
CS 3200	Database Design	
Meaningful Minor list (see below)		

CCIS Meaningful Minors

The concept of "CCIS Meaningful Minors" allows students the chance to personalize a computer or information science minor to meet individual academic needs and interests. Students may take *one elective* related to computation or information from a preapproved list of courses offered across the university rather than from within CCIS. This allows students to integrate the minor with a course in their own major or with a course in another area of interest. Students may of course choose to take all electives in the minor within CCIS if they wish.

Code	Title	Hours
Arts, Media and Design		
ARTG 3451	Information Design 1	
ARTG 4552	Information Design 2	
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5110	Information Design History	
ARTG 5120	Research Methods for Design	
ARTG 5330	Visualization Technologies 1	
ARTG 6100	Information Design Studio 2: Dynamic Mapping and Models	
ARTG 6200	Information Design Studio 3: Synthesis	
GSND 5110	Game Design and Analysis	
GSND 6350	Data-Driven Player Modeling	
Bouvé Health Sciences		
HINF 5101	Introduction to Health Informatics and Health Information Systems	
HINF 5102	Data Management in Healthcare	
HINF 5300	Personal Health Interface Design and Development	
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	
D'Amore-McKim—Business		
FINA 4608	Advanced Financial Strategy	
MISM 3305	Information Resource Management	
MISM 3403	Data Management in the Enterprise	
MKTG 3401	Marketing Research	
MKTG 3501	Marketing Analytics	
SCHM 2301	Supply Chain and Operations Management	
Computer and Information Science		
IA 5010	Foundations of Information Assurance	
IA 5200	Security Risk Management and Assessment	
Engineering		
EECE 4542	Advanced Engineering Algorithms	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	

EECE 5639	Computer Vision
IE 5640	Data Mining for Engineering Applications
Science	
BINF 6308	Bioinformatics Computational Methods 1
BINF 6309	Bioinformatics Computational Methods 2
ENVR 2500	Biostatistics
MATH 2331	Linear Algebra
MATH 3081	Probability and Statistics
MATH 4581	Statistics and Stochastic Processes
PSYC 2320	Statistics in Psychological Research
Social Science and Humanities	
ECON 2350	Statistics
ECON 3916	Intermediate Selected Topics in Microeconomics
POLS 2400	Quantitative Techniques

GPA Requirement

2.000 GPA required in the minor

Computer and Information Science Combined Majors

The college offers combined majors with business administration, cognitive psychology, biology, biochemistry, mathematics, physics, environmental science, health sciences, game development, music composition and technology, linguistics, communication, design, media arts, journalism, criminal justice, economics, English, history, philosophy, political science, and sociology, and a combined major in computer science and information science. Each of the combined majors offers the opportunity for intense study in two disciplines with appropriate breadth in the liberal arts. Students take nine to 13 courses in each discipline (or a related discipline) and at least one integrative course that binds the disciplines together. These programs offer an excellent educational opportunity for the ambitious student.

Programs

Bachelor of Science (BS)

- Computer Science and Information Science (p. 289)
- Computer Science and Biology (p. 293)
- Computer Science and Business Administration (p. 234)
- Computer Science and Cognitive Psychology (p. 301)
- Computer Science and Communication Studies (p. 125)
- Computer Science and Criminal Justice (p. 307)
- Computer Science and Design (p. 80)
- Computer Science and Economics (p. 312)
- Computer Science and English (p. 314)
- Computer Science and Environmental Science (p. 318)
- Computer Science and Game Development (p. 83)
- Computer Science and History (p. 322)
- Computer Science and Journalism (p. 170)
- Computer Science and Linguistics (p. 327)
- Computer Science and Mathematics (p. 330)
- Computer Science and Media Arts (p. 84)
- Computer Science and Music with Concentration in Music Technology (p. 188)

- Computer Science and Philosophy (p. 337)
- Computer Science and Physics (p. 339)
- Computer Science and Political Science (p. 342)
- Computer Science and Sociology (p. 344)
- Cybersecurity and Business Administration (p. 239)
- Cybersecurity and Criminal Justice (p. 351)
- Cybersecurity and Economics (p. 352)
- Data Science and Biochemistry (p. 354)
- Data Science and Health Science (p. 355)
- Information Science and Business Administration (p. 249)
- Information Science and Cognitive Psychology (p. 360)
- Information Science and Environmental Science (p. 362)
- Information Science and Journalism (p. 173)

Bachelor of Science in Computer Engineering (BSCompE)

- Computer Engineering and Computer Science (p. 290)

Computer Science and Information Science, BS

The computer science and information science combined major is designed for students looking for a thorough immersion in both fields. Students will focus on the fundamentals and theories of computing plus the management of information—while taking all required courses for the computer science and information science undergraduate degree programs.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 3800	Theory of Computation	4
CS 4400	Programming Languages	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Information Science Courses

Code	Title	Hours
Required Courses in Information Science		
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4300	Human Computer Interaction	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project	5

Computing and Social Issues

Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	4
PHIL 1145	Technology and Human Values	4
SOCL 1280	The 21st-Century Workplace	4
SOCL 3485	Environment, Technology, and Society	4
SOCL 4528	Computers and Society	4

Supporting Courses

Code	Title	Hours
Psychology		
PSYC 1101	Foundations of Psychology	4
Calculus		
MATH 1341	Calculus 1 for Science and Engineering (A grade of C– or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2331	Linear Algebra	4
Statistics		
PSYC 2320 or ECON 2350	Statistics in Psychological Research or Statistics	4

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3315	Advanced Writing in the Technical Professions or Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
Complete seven general electives.		

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

133 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	PSYC 2320	4
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	CS 3500	4	Elective	4
CS 2500 and CS 2501	5	MATH 1341	4				
ENGW 1111	4	Elective	4				
PSYC 1101	4						
		19			18	8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	MATH 2331	4	Co-op	
MATH 1342	4	CS 3650	4	Elective	4		
CS 3000	4	IS 4300	4				
Computing and social issues	4	Elective	4				
		CS 1210	1				
		16			17	8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3700	4	Elective	4	Co-op	
		IS 4800	4	Elective	4		
		CS 3700	4				
		Elective	4				
		0			16	8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4400	4			Co-op	
		ENGW 3302	4				
		CS 3800	4				
		Elective	4				
		0			16	0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4900	5				
		CS 4500	4				
		Computing and social issues	4				
		Elective	4				
		0			17	0	

Total Hours: 135

Computer Engineering and Computer Science, BSCompE

This intercollege dual major serves students who are interested in both computer hardware and software, combining an accredited Bachelor of Science degree in engineering with the added benefits of depth in software principles found in a Bachelor of Science degree in computer science. This program provides a well-rounded computing education that includes engineering design principles, computational thinking, proper program design, and a solid background in mathematics and science. The degree is fully accredited as a Bachelor of Science in Computer Engineering and adds the computer science depth.

Because of the large body of shared knowledge between computer engineering and computer science, an integrated dual major between these two disciplines is a logical course of study and can be

Five Years, Three Co-ops in Summer 2/Fall

Year 1			
Fall	Hours	Spring	Hours
CS 1200	1	CS 2510 and CS 2511	5

accomplished within a student’s usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have a solid foundation in both computer hardware and software principles, and should be prepared for a wide range of career paths in the computing field or any related field that relies on the application of engineering or computing principles.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Computer and Information Science as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA in EECE courses

Engineering

Complete 48 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Computer Engineering Fundamentals		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5
EECE 2540	Fundamentals of Networks	4
CS 3000	Algorithms and Data	4
Electrical Engineering Fundamentals		
Complete one of the following:		4
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
EECE Technical Electives		
Complete two of the following:		8
EECE 2750	Enabling Engineering	
EECE 4991	Research	

EECE 4992	Directed Study	
EECE 4993	Independent Study	
GE 4608	Nanotechnology in Engineering	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
EECE 2412 to EECE 2530		
EECE 3324 to EECE 4698		
EECE 5155 to EECE 5698		
CS/IS Technical Electives		8
Complete two of the following:		
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3540	Game Programming	
CS 3700	Networks and Distributed Systems	
CS 3740	Systems Security	
CS 3800	Theory of Computation	
CS 4850	Building Game Engines	
CS 4100 to CS 4410		
CS 4510 to CS 4650		
CS 4740 to CS 4760		
IS 4200 to IS 4700		

Supplemental Credit		
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Computer Science Requirements

Code	Title	Hours
Computer Science Introductory Courses		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
Computer Science Upper-Level Courses		
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Integrative Courses

The following courses are taken in the major and count toward the integrative requirement:

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 3081	Probability and Statistics	4
CS 1800	Discrete Structures	4
PHYS 1151 and PHYS 1152	Physics for Engineering 1 and Lab for PHYS 1151	4
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

Supporting Courses: Mathematics/Science

Complete 35 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement:

GE 1502	Cornerstone of Engineering 2	1
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Writing Requirements and NUPATH Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPATH Requirements through General Electives

NUPATH requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		8

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17			17	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	EECE 2160	4	Vacation	0	Co-op	0
PHYS 1155 (ND)	3	CS 2510 (ND, AD)	4				
PHYS 1156 (AD)	1	CS 2511	1				
PHYS 1157	1	CS 2800	4				
CS 2500 (ND, FQ)	4	CS 2801	1				
CS 2501	1	EECE 2000	1				
CS 1800 (FQ)	4	General elective	4				
CS 1802	1						
		19			19	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 2150	5	ENGW 3302 (WD)	4	Co-op	0
		CE fundamental course	4	CS 3500 (ND, AD)	4		

	CE fundamental course	5			
	CS 3650	4			
		0	18	8	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3000	1	EECE 4790 (EI, WI, CE)	4	Co-op	0
		CE fundamental course	4	CS 3000	4		
		EE fundamental course	4				
		MATH 3081 (AD)	4				
		CCIS Technical Elective	4				
		0	17	8			0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		EECE technical elective	4
		EECE technical elective	4
		CS 4500 (WI)	4
		CS 4501	0
		0	16

Total Hours: 139

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17	17	0			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	Vacation	0
PHYS 1155 (ND)	3						
PHYS 1156 (AD)	1						

PHYS 1157	1
CS 2500 (ND, FQ)	4
CS 2501	1
CS 1800 (FQ)	4
CS 1802	1
EECE 2000	1
	20
	0
	0
	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 2150	5	Co-op	0	Co-op	0	ENGW 3302 (WD)	4
EECE 2160	4					MATH 3081 (AD)	4
CS 2510 (ND, AD)	4						
CS 2511	1						
CS 2800	4						
CS 2801	1						
	19		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 3000	1	Co-op	0	Co-op	0	EECE 4790 (EI, WI, CE)	4
CE fundamental course	4					CS 3000	4
CE fundamental course	5						
CS 3500 (ND, AD)	4						
CS 3650	4						
	18		0		0		8

Year 5

Fall	Hours	Spring	Hours
EECE 4792 (EI, WI, CE)	4	EECE technical elective	4
CE fundamental course	4	General elective	4
EE fundamental course	4	EECE technical elective	4
CCIS Technical Elective	4	CS 4500 (WI)	4
		CS 4501	0
	16		16

Total Hours: 139

Computer Science and Biology, BS

The computer science and biology combined major reflects how research in biology, especially genetics, has become a computational science.

The program provides a strong foundation in biology, chemistry, and mathematics, as well as software development and algorithms.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development ¹	
CS 1210	Professional Development for CCIS Co-op ²	
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation (integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1
Computer Science Elective Courses		
With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.		
Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

¹ Students entering through the biology department may take Biology at Northeastern (BIOL 1000).

² Students entering through the biology department may take Professional Development for Co-op (EESC 2000).

Biology Courses

Code	Title	Hours
Foundations of Biology		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
Inquiries		
BIOL 2299	Inquiries in Biological Sciences	4
Molecular Biology		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
Techniques in Biology		
BIOL 2309	Biology Project Lab	4
Chemistry		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Biology Capstone		
BIOL 4701	Biology Capstone	4
Intermediate and Advanced Biology Electives		
Complete two biology courses (with corequisite labs if offered). Choose one of these two courses from the following list:		9-10
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	
Choose the second elective from the following list:		4-5
BIOL 2311 to 4999, EEMB 2290 to 5515, EEMB 5520 to 5534, EEMB 5548 to 5569, EEMB 2400		
Biology Integrative Course		
Complete one of the following:		4-5
BIOL 5569	Advanced Microbiology	
BINF 6308	Bioinformatics Computational Methods 1	
BIOL 4707	Cell and Molecular Biology	
BIOL 5581	Biological Imaging	
BIOL 5587	Comparative Neurobiology	
BIOL 5591	Advanced Genomics	
EEMB 5548	Sociobiology	

Supporting Courses

Code	Title	Hours
Calculus		
Complete two calculus courses with a grade of C– or higher:		
MATH 1251	Calculus and Differential Equations for Biology 1	4
MATH 1252	Calculus and Differential Equations for Biology 2	4
Probability and Statistics		
Complete one of the following: 4-5		
MATH 3081	Probability and Statistics	
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
Computing and Social Issues		
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	
Intermediate or Advanced Science		
Complete one course from the following: 4		
BIOL 2301 to BIOL 5999		
CHEM 2311 to CHEM 5999		
EEMB 2290 to EEMB 5999		
ENVR 2310 to ENVR 5999		
MATH 2280 to MATH 5999		
PHYS 2303 to PHYS 5999		
PSYC 2290 to PSYC 5999		

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Complete five general electives.

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Exploring Creative Expression and Innovation
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines

- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

141 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	BIOL 2301	4	Vacation	
CS 1800 and CS 1802	5	BIOL 2299	4	BIOL 2302	1		
CS 2500 and CS 2501	5	ENGW 1111	4	Elective	4		
BIOL 1107 and BIOL 1108	5	Elective	4				
CHEM 1161	4						
CHEM 1162	1						
CHEM 1163	0						
		21		17		9	
0							
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Elective	4	Co-op	
CHEM 2311 and CHEM 2312	5	CHEM 2313 and CHEM 2314	5	BIOL 2309	4		
CS 3200	4	CS 3000	4				
MATH 1251	4	BIOL 3611	4				
		BIOL 3612	1				
		MATH 1252	4				
		17		19		8	
0							
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	ENGW 3302	4	Co-op	
		Computing and social issues	4	ENVR 2500 and ENVR 2501 (or MATH 3081)	5		
		BIOL elective	5				
		BIOL integrative elective	4				
		THTR 1170	1				
		0		18		9	
0							

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500 and CS 4501		4 Elective		4 Co-op	
		BIOL 4701		4 Elective		4	
		BIOL elective		4			
		Computer science elective		4			
	0		16		8		0

Total Hours: 142

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	BIOL 2299	4				
BIOL 1107 and BIOL 1108	5	ENGW 1111	4				
CS 1200	1	MATH 1251	4				
CHEM 1161	4						
CHEM 1162	1						
CHEM 1163	0						
	21		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 3000	4	Vacation	0	Co-op	0
CS 3200	4	BIOL 2301	4				
CHEM 2311 and CHEM 2312	5	BIOL 2302	1				
MATH 1252	4	CHEM 2313 and CHEM 2314	5				
		CS 1210	1				
		Elective	4				
	17		19		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	ENGW 3302	4	Co-op	0
		THTR 1170	1	BIOL 3611	4		
		BIOL 2309	4	BIOL 3612	1		
		Elective	4				
		BIOL elective	4				
	0		17		9		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BIOL elective	5	Elective	4	Co-op	0
		Computer science elective	4	Elective	4		

ENVR 2500 and ENVR 2501 (or MATH 3081)	5				
Computing and social issues	4				
	0	18	8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CS 4500 and CS 4501	4
		BIOL integrative elective	4
		BIOL 4701	4
		Elective	4
	0		16

Total Hours: 142

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	BIOL 2299	4				
BIOL 1107 and BIOL 1108	5	ENGW 1111	4				
CS 1200	1	MATH 1251	4				
CHEM 1161	4						
CHEM 1162	1						
CHEM 1163	0						
	21		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	Co-op	0	Co-op	0	Vacation	0
CS 3500	4						
CS 1210	1						
MATH 1252	4						
BIOL 2301	4						
BIOL 2302	1						
	19		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	Elective	4
CHEM 2313 and CHEM 2314	5					ENGW 3302	4
BIOL 2309	4						
BIOL 3611	4						

BIOL 3612	1						
	18		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op		0	Co-op	0	Elective
BIOL elective	4						Elective
Elective	4						
THTR 1170	1						
CS 3200	4						
	17		0		0		8

Year 5

Fall	Hours	Spring	Hours
BIOL elective	5	CS 4500 and CS 4501	4
Computer science elective	4	BIOL 4701	4
ENVR 2500 and ENVR 2501 (or MATH 3081)	5	BIOL integrative elective	4
Computing and social issues	4	Elective	4
	18		16

Total Hours: 142

Computer Science and Business Administration, BS

The computer science and business combined major delivers a technical degree with a strong grounding in business. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while also focusing on technical skills like program design, software development, computer organization, systems and networks, theories of computation, principles of languages, and advanced algorithms and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1

CS 1210	Professional Development for CCIS Co-op	1
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Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Complete two of the following: 8

CS 3650	Computer Systems	
CS 3700	Networks and Distributed Systems	
DS 4100	Data Collection, Integration, and Analysis	
DS 4200	Information Presentation and Visualization	
DS 4300	Large-Scale Information Storage and Retrieval	

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete four credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Business Courses

Code	Title	Hours
Required Business Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
ORGB 3201	Organizational Behavior	4
MKTG 2201	Introduction to Marketing	4
MGSC 2301	Business Statistics	4
Choose one of the following: ¹		
STRT 4501	Strategy in Action	4
STRT 4516	External Case Competition Challenge	

¹ Strategy in Action (STRT 4501), and External Case Competition Challenge (STRT 4516) both satisfy the capstone requirement.

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below (p. 236).

- Accounting (p. 236)
- Entrepreneurship and Innovation (p. 236)
- Finance (p. 236)
- Management (p. 237)
- Marketing (p. 237)
- Supply Chain Management (p. 237)

Integrative Course

Code	Title	Hours
Information Resource Management		
MISM 2301	Management Information Systems	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	
Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete four general electives.		16

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Computer Science GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
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ENTR 4501	Business Planning for Technology Ventures
ENTR 4503	Business Planning for Small and Medium Enterprises
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following: 8

ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	

FINA 4310	Working Capital Management
FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4

or MKTG 4506 Consumer Behavior

Electives

Complete two of the following: 8

MKTG 2301	Marketing and Society
MKTG 3301	Marketing Management (if not selected as a required course)
MKTG 3501	Marketing Analytics
MKTG 4220	Marketing in Asia
MKTG 4420	Sales Management
MKTG 4502	Marketing in the Service Sector
MKTG 4504	Advertising and Brand Promotion
MKTG 4506	Consumer Behavior (if not selected as a required course)
MKTG 4508	Digital Marketing
MKTG 4510	New Product Development
MKTG 4512	International Marketing

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following: 4		
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	MATH 1341 or 1231	4	Vacation	
CS 1800 and CS 1802	5	CS 3200	4	ACCT 1201	4		
CS 2500 and CS 2501	5	ECON 1116	4				
ENGW 1111	4	Elective	4				
ECON 1115	4						
		19			17		
						8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ACCT 2301	4	Business concentration 1	4	MKTG 2201	4	Co-op	
CS 3500	4	CS 3000	4	Elective	4		

MGSC 2301	4	Computing and social issues	4				
Elective	4	CS 1210	1				
		Elective	4				
		16			17		
						8	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3650	4	FINA 2201	4	Co-op	
		MISM 2301	4	ORGB 3201	4		
		Business concentration 2	4				
		CS/IS/DS elective	4				
		THTR 1170	1				
		0			17		
						8	0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3700	4	STRT 4501	4		
		CS 4500 and CS 4501	4	ENGW 3302	4		
		Business concentration 3	4				
		Business concentration 4	4				
		0			16		
						8	

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 3200	4				
CS 1200	1	ECON 1116	4				
ECON 1115	4	Elective	4				
ENGW 1111	4						
		19			17		
						0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	ACCT 2301	4	Vacation	0	Co-op	0
MATH 1341	4	CS 3000	4				
ACCT 1201	4	FINA 2201	4				
MGSC 2301	4	CS 1210	1				
		Elective	4				
		16			17		
						0	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3650	4	ORGB 3201	4	Co-op	0

Business concentration 1	4	MKTG 2201	4
MISM 2301	4		
ENGW 3302	4		
THTR 1170	1		

0 17 8 0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Business concentration 2	4	Elective	4	Co-op	0

CS 3700	4	Elective	4
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Business concentration 3	4
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CS/IS/DS elective	4
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0 16 8 0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	STRT 4501	4

Business concentration 4	4
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CS 4500 and CS 4501	4
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Computing and social issues	4
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0 16

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0

CS 2500 and CS 2501	5	CS 3200	4
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CS 1200	1	ECON 1116	4
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ECON 1115	4	Elective	4
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ENGW 1111	4
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19 17 0 0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0

MATH 1341	4
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ACCT 1201	4
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MGSC 2301	4
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CS 1210	1
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17 0 0 0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ACCT 2301	4	Co-op	0	Co-op	0	ORGB 3201	4

CS 3000	4	MKTG 2201	4
Elective	4		
FINA 2201	4		
THTR 1170	1		

17 0 0 8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3650	4	Co-op	0	Co-op	0	Elective	4

Business concentration 1	4	Elective	4
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MISM 2301	4
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ENGW 3302	4
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16 0 0 8

Year 5

Fall	Hours	Spring	Hours
CS/IS/DS elective	4	STRT 4501	4

Business concentration 2	4	CS 4500 and CS 4501	4
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Business concentration 3	4	Computing and social issues	4
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CS 3700	4	Business concentration 4	4
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16 16

Total Hours: 134

Computer Science and Cognitive Psychology, BS

The computer science and cognitive psychology combined major provides a foundation in general psychology, psychology of language, cognition, and statistics—all supplemented by an experimental laboratory course, seminar course, and psychology electives. Students who choose this program often have a general interest in human psychology or specific interests in artificial intelligence or human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1

CS 1210	Professional Development for CCIS Co-op	1
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Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4100	Artificial Intelligence (Integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500 (Integrative course)	4
IS 4300	Human Computer Interaction (Integrative course)	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete twelve credits of CS, IS or DS classes that are not already required. Choose courses within the following ranges:	12
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Psychology Courses

Code	Title	Hours
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Required Courses

PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
PSYC 3466	Cognition	4

Advanced Psychology

PSYC 3452 or PSYC 3458	Sensation and Perception Biological Psychology	4
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Laboratory in Psychology

Complete one of the following:	4
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4622	Laboratory in Sensation and Perception

Seminar in Psychology

Complete one of the following:	4
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4668	Seminar in Sensation and Perception
PSYC 4674	Seminar in Cognitive Neuroscience

Psychology Electives

Note: Courses satisfying the categories above cannot be reused.

Complete two of the following: 8

PSYC 3402	Social Psychology
PSYC 3404	Developmental Psychology
PSYC 3450	Learning and Motivation
PSYC 3451	Learning Principles and Behavior Analysis
PSYC 3452	Sensation and Perception
PSYC 3458	Biological Psychology
PSYC 4512	Neuropsychology
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4622	Laboratory in Sensation and Perception
PSYC 4628	Laboratory in Developmental Psychology
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4668	Seminar in Sensation and Perception
PSYC 4674	Seminar in Cognitive Neuroscience
PSYC 4676	Seminar in Developmental Psychology
With prior approval, directed study research and Honors Project courses can also be counted:	
PSYC 4970	Junior/Senior Honors Project 1
PSYC 4971	Junior/Senior Honors Project 2
PSYC 4991	Directed Study Research

Supporting Courses

Code	Title	Hours
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Calculus

A grade of C– or higher is required:

MATH 1341	Calculus 1 for Science and Engineering	4
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks
PHIL 1145	Technology and Human Values
SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines
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THTR 1170	1			
0	17	8	0	

Required General Electives

Code	Title	Hours
	Complete eight general electives.	32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4	
CS 2500 and CS 2501	5	MATH 1341	4			
PSYC 1101	4	Elective	4			
ENGW 1111	4					
19		17		8		0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PSYC 2320	4	CS elective	4	Elective	4	Co-op
CS 3000	4	IS 4300	4	Elective	4	
Elective	4	PSYC elective	4			
PSYC 3464	4	PSYC 3452 or 3458	4			
		CS 1210	1			
16		17		8		0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4100	4	Elective	4	Co-op
		PSYC lab elective	4	Elective	4	
		CS elective	4			
		CS elective	4			

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4500 and CS 4501	4	Elective	4	
		PSYC elective	4	ENGW 3302	4	
		PSYC seminar	4			
		Computing and social issues	4			
0		16		8		0

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation
CS 1800 and CS 1802	5	PSYC 3466	4			
CS 2500 and CS 2501	5	Elective	4			
PSYC 1101	4	Elective	4			
ENGW 1111	4					
19		17		0		0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	PSYC 3464	4	Vacation	0	Co-op
MATH 1341	4	CS 3000	4			
PSYC 2320	4	PSYC 3452	4			
Elective	4	CS 1210	1			
		CS elective	4			
16		17		0		0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	IS 4300	4	Elective	4	Co-op
		ENGW 3302	4	Elective	4	
		PSYC elective	4			
		CS elective	4			
		THTR 1170	1			
0		17		8		0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	CS 4100	4	Elective	4	Co-op
		CS elective	4	Elective	4	
		PSYC lab elective	4			
		PSYC elective	4			
0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CS 4500 and CS 4501	4
		PSYC seminar	4
		Computing and social issues	4
		Elective	4
	0		16

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	PSYC 3466	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4	Elective	4				
CS 1200	1						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
MATH 1341	4						
PSYC 2320	4						
Elective	4						
CS 1210	1						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 3464	4	Co-op	0	Co-op	0	Elective	4
CS 3000	4					Elective	4
PSYC 3452	4						
THTR 1170	1						
CS elective	4						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 4300	4	Co-op	0	Co-op	0	Elective	4
ENGW 3302	4					Elective	4
PSYC elective	4						
CS elective	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CS 4100	4	CS 4500 and CS 4501	4
CS elective	4	PSYC seminar	4

PSYC lab elective	4	Computing and social issues	4
PSYC elective	4	Elective	4
	16		16

Total Hours: 134

Computer Science and Communication Studies, BS

The computer science and communication studies combined major integrates practical skills and theory. Students will gain both a strong computer science foundation and a deep understanding of the major conceptual frameworks for human communication—plus how to apply this knowledge to solve problems in today's society.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
CS 4550	Web Development	4
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1

Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 12

CS 2500 or higher, except CS 5010

DS 2000 or higher, except DS 4900

IS 2000 or higher, except IS 4900

Communication Studies Courses

Code	Title	Hours
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Communication Studies Common Requirements

COMM 1101	Introduction to Communication Studies	4
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COMM 1112	Public Speaking	4
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or COMM 2301 Communication Research Methods

Foundation Course

Complete one of the following: 4

COMM 1210	Persuasion and Rhetoric	
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COMM 1225	Communication Theory	
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COMM 1231	Principles of Organizational Communication	
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COMM 1255	Communication in a Digital Age	
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Cluster Course

Complete one of the following: 4

COMM 1131	Sex, Relationships, and Communication	
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COMM 2303	Global and Intercultural Communication	
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COMM 2304	Communication and Gender	
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COMM 2501	Communication Law	
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COMM 2551	Free Speech in Cyberspace	
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Writing-Intensive

Complete two of the following: 8

COMM 3200	Mobile Communication	
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COMM 3201	Health Communication	
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COMM 3230	Interpersonal Communication	
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COMM 3304	Communication and Inclusion	
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COMM 3320	Political Communication	
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COMM 3330	Argumentation Theory	
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COMM 3400	Rhetoric of Science	
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COMM 3414	Great Speakers and Speeches 2, 1930–Present	
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COMM 3415	Communication Criticism	
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COMM 3445	Public Relations Principles	
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COMM 3501	Free Speech: Law and Practice	
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COMM 3530	Communication and Sexualities	
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COMM 3532	Theories of Conflict and Negotiation	
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COMM 3610	Communication, Politics, and Social Change	
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COMM 4535	Nonverbal Social Interaction	
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COMM 4605	Youth and Communication Technology	
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COMM 4631	Crisis Communication and Image Management	
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Communication Studies Electives

Complete three courses in the following range: ¹ 12

COMM 1131 to COMM 4996

¹ Special Topics in Communication Studies (COMM 4912), and Junior/Senior Honors Project 1 (COMM 4970) are excluded.

Supporting Courses

Code	Title	Hours
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Mathematics

MATH 1341	Calculus 1 for Science and Engineering	4
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
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IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
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INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
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PHIL 1145	Technology and Human Values	
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SOCL 1280	The 21st-Century Workplace	
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SOCL 3485	Environment, Technology, and Society	
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SOCL 4528	Computers and Society	
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Writing Requirements

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

Complete one of the following: 4

ENGW 3302	Advanced Writing in the Technical Professions	
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ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
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COMM 3409	Advocacy Writing ¹	
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² If Advocacy Writing (COMM 3409) is selected it will also satisfy a communication studies elective requirement. One additional general elective will be then required in its place.

Required General Electives

Code	Title	Hours
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Complete eight general electives.

32

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and COMM courses

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	COMM 1112 or 2301	4				
ENGW 1111	4	Elective	4				
COMM 1101	4						
		19	17	0	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Vacation	0
CS 3500	4						
MATH 1341	4						
Communication studies foundation course	4						
Elective	4						
		17	0	0	0		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	Elective	4
CS elective	4					Elective	4
Communication studies cluster course	4						
Communication studies writing-intensive course	4						
		16	0	0	0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Advanced writing	4	Co-op	0	Co-op	0	Elective	4
Communication studies elective	4					Elective	4
CS elective	4						
Elective	4						
		16	0	0	0		8

Year 5			
Fall	Hours	Spring	Hours
Communication studies writing-intensive course	4	CS 4000	1
Communication studies elective	4	CS 4500	4
CS elective	4	CS 4550 and CS 4501	4
Computing and social issues	4	Communication studies elective	4
		Elective	4
		16	17

Total Hours: 134

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341	4		
CS 2500 and CS 2501	5	COMM 1112 or 2301	4				
ENGW 1111	4	Elective	4				
COMM 1101	4						
		19	17	8	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Elective	4
Communication studies foundation course	4					Elective	4
CS elective	4						
CS 3000	4						
Elective	4						
		17	0	0	0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op	0	Co-op	0	Elective	4
Communication studies cluster course	4					ENGW 3302 or 3315	4
Communication studies writing-intensive course	4						
CS elective	4						
Elective	4						
		17	0	0	0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
CS elective	4	CS 4500 and CS 4501	4	Elective	4
Communication studies writing-intensive course	4	CS 4550	4	Elective	4
Communication studies elective	4	Communication studies elective	4		
Computing and social issues	4	Communication studies elective	4		
		16			8

Total Hours: 134

Computer Science and Criminal Justice, BS

For students interested in criminal justice in an increasingly digital world, the computer science and criminal justice combined degree offers a strong programming foundation coupled with academic and experiential knowledge of the criminal justice system. Students will learn the principles, practices, and responsibilities of criminal justice professionals alongside the computer science skills necessary for practical applications in the field.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
or CRIM 2000	Co-op Integration Seminar 1	
Computer Science Fundamental Courses		
A grade of C- or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of upper-division CS, IS, or DS courses that are not already required. Choose courses within the following ranges:

- CS 2500 or higher, except CS 5010
- IS 2000 or higher, except IS 4900
- DS 2000 or higher, except DS 4900

Criminal Justice Courses

Code	Title	Hours
Criminal Justice Required Courses		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4
Criminal Justice Required Capstone		
CRIM 4949	Senior Capstone Seminar	4
Thematic Elective		
Complete one course from the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Elective		
Complete one course from the following:		4
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
System-Wide Elective		
Complete one course from the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	

Criminal Justice Elective		
Complete one additional CRIM elective.		4

Integrative Course Requirement

Code	Title	Hours
Complete one course from the following:		
CRIM 4040	Crime Prevention	
CRIM 4630	Political Crime and Terrorism	
CRIM 4800	Crime Mapping	
CRIM 4900	Advanced Seminar in Criminology and Criminal Justice	

Supporting Course

Code	Title	Hours
Computing and Social Issues		
Complete one of the following:		
SOCL 4528	Computers and Society	4
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:		
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete seven general electives.		28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines

- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, 2 Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	Vacation
CS 1800 and CS 1802	5	IS 2000	4	CS 3500	4	
CS 2500 and CS 2501	5	CRIM 2100	4			
CRIM 1100	4	CRIM 2200	4			
ENGW 1111	4					
		19		17		8

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1210 or CRIM 2000	1	Co-op		Co-op		ENGW 3302, 3308, or 3315
CS 3000	4					Elective
CRIM 3600	4					
CJ thematic elective	4					
Elective	4					
		17		0		0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS elective 1	4	Co-op		Co-op		Elective
CRIM 3700	4					Elective
CJ survey elective	4					
CS elective 2	4					
THTR 1170	1					
		17		0		0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS elective 3	4	CS elective 4	4	Elective	4	
CJ system- wide elective	4	CRIM 4949	4	Elective	4	
CJ elective	4	Elective	4			
Computing and social issues	4	CJ integrative course	4			
		16		16		8

Total Hours: 134

Five Years, 3 Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	IS 2000	4				
CS 2500 and CS 2501	5	CRIM 2100	4				
CRIM 1100	4	CRIM 2200	4				
ENGW 1111	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210 or CRIM 2000	1	Co-op		Co-op		Vacation	
CS 3000	4						
CS 3200	4						
CS 3500	4						
CRIM 3600	4						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 3700	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
CS elective 1	4					Elective	4
CJ thematic elective	4						
CJ survey elective	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	Co-op		Co-op		Elective	4
CJ system-wide elective	4					Elective	4
Elective	4						
Computing and social issues	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CJ integrative course	4	CS elective 4	4
CJ elective	4	CRIM 4949	4
Elective	4	Elective	4
CS elective 3	4	Elective	4
	16		16

Total Hours: 134

Computer Science and Design, BS

The combined major in computer science and design integrates fundamental design courses with a strong programming foundation. Students will declare a concentration in interaction design, graphic and information design, or experience design. Students in this major often have an interest in human-centered design methods used in developing digital interfaces and applications.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200 or ARTF 1000	Leadership Skill Development Art and Design at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
IS 4300	Human Computer Interaction	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:	8
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Design Requirements

Code	Title	Hours
Design Courses		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	4
ARTG 1250	Design Process Context and Systems	4
ARTG 2260	Programming Basics	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Art + Design History		
Complete one of the following:		4
ARTH 1100	Interactive Media and Society	
ARTH 1111	Global Art and Design History: Renaissance to Modern	
ARTH 2210	Modern Art and Design History	
ARTH 2211	Contemporary Art and Design History	
ARTH 2212	Survey of the Still and Moving Image	
ARTH 2215	History of Graphic Design	
Degree Capstone Project		
Complete one of the following:		8
ARTG 4550 and ARTG 4551	Design Degree Project 1 and Design Degree Project 2	
ARTG 4700 and ARTG 4701	Interaction Team Degree Project 1 and Interaction Team Degree Project 2	

Design Options

Complete one of the following options:

Code	Title	Hours
Interaction Design Option		
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	4
ARTG 3700	Interaction Design 2: Mobile	4
Graphic and Information Design Option		
ARTG 2252	Graphic Design 1	4
ARTG 3450	Graphic Design 2	4
Experience Design Option		
ARTG 3462	Experience Design 1	4
ARTG 3463	Experience Design 2	4

Degree-Focused Electives

Code	Title	Hours
Complete two courses from the following lists:		8
<i>Art + Design</i>		
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	

ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)
ARTD 2100	Narrative Basics
ARTD 2360	Photo Basics (with optional ARTD 2361)
ARTD 2370	Animation Basics (with optional ARTD 2371)
ARTD 2380	Video Basics (with optional ARTD 2381)
ARTG 2252	Graphic Design 1
ARTG 2300	Business Literacy for Design and Media
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)
ARTG 3450	Graphic Design 2
ARTG 3250	Physical Computing
ARTG 3351	Time-Based Design
ARTG 3450	Graphic Design 2
ARTG 3460	Identity and Brand Design
ARTG 3462	Experience Design 1
ARTG 3463	Experience Design 2
ARTG 3700	Interaction Design 2: Mobile
ARTG 4552	Information Design 2
ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3
ARTE 4901	Special Topics in Art and Design Studio
<i>Psychology</i>	
PSYC 1101	Foundations of Psychology
PSYC 3452	Sensation and Perception
PSYC 3464	Psychology of Language
PSYC 3466	Cognition
<i>Computer Science</i>	
CS 3200	Database Design
CS 3520	Programming in C++
CS 3540	Game Programming
CS 3650	Computer Systems
CS 3700	Networks and Distributed Systems
CS 3800	Theory of Computation
CS 4100	Artificial Intelligence
CS 4150	Game Artificial Intelligence
CS 4300	Computer Graphics
CS 4400	Programming Languages
CS 4520	Mobile Application Development
CS 4550	Web Development
CS 4850	Building Game Engines
IS 2000	Principles of Information Science
DS 4100	Data Collection, Integration, and Analysis
DS 4200	Information Presentation and Visualization
DS 4300	Large-Scale Information Storage and Retrieval
DS 4400	Machine Learning and Data Mining 1
DS 4420	Machine Learning and Data Mining 2
CS 4991	Research

CS 4992	Directed Study
CS 4993	Independent Study

Integrative Requirement

Code	Title	Hours
The following courses are used in the major but also count as the integrative requirement:		
IS 4300	Human Computer Interaction	
ARTG 2260	Programming Basics	

Supporting Course

Code	Title	Hours
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six general electives.		24

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

131 total semester hours required

Plan of Study

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200 or ARTF 1000	1	CS 2510 and CS 2511	5	Vacation		Vacation
CS 1800 and CS 1802	5	ARTG 1250	4			
CS 2500 and CS 2501	5	ARTF 2223 (with optional ARTF 2224)	4			
ENGW 1111	4	Elective	4			
ARTF 1122 (with optional ARTF 1123)	4					
		19		17		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1210	1	Co-op 1		Co-op 1		Elective
CS 3500	4					Elective
Design option course 1	4					
CS 3000	4					
ARTG 2250 (with optional ARTG 2251)	4					
		17		0		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
IS 4300	4	Co-op 2		Co-op 2		ENGW 3302 or 3315
ARTG 2260	4					Elective
Degree-focused elective	4					
Art + design history elective	4					
THTR 1170	1					
		17		0		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTG 3350	4	Co-op 3		Co-op 3		
Design option course 2	4					
Degree-focused elective 2	4					
Computing and social issues elective	4					
		16		0		0

Year 5

Fall	Hours	Spring	Hours
Design capstone 1*	4	Design capstone 2*	4
ARTG 3451	4	CS elective	4
CS 4500 and CS 4501	4	Elective	4
CS elective	4	Elective	4
	16		16

Total Hours: 134

* Indicates course must be taken in the semester listed.

Four Years, Two Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	ARTG 1250	4	CS 3000	4		
CS 2500 and CS 2501	5	ARTF 2223 (with optional ARTF 2224)	4				
ENGW 1111	4	Elective	4				
ARTF 1122 (with optional ARTF 1123)	4						
	19		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTG 2260	4	Co-op 1		Co-op 1		ENGW 3302	4
ARTG 2250 (with optional ARTG 2251)	4					Elective	4
Design option course 1	4						
Degree-focused elective 1	4						
CS 1210	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op 2		Co-op 2		Elective	4
IS 4300	4					Elective	4
Design option course 2	4						
Art + design history elective	4						

Computing and social issues	4			
	17	0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Design capstone 1*	4	Design capstone 2*	4	Elective	4
ARTG 3350	4	Degree-focused elective 2	4	Elective	4
ARTG 3451	4	CS elective	4		
CS 4500 and CS 4501	4	CS elective	4		
	16		16		8

Total Hours: 134

Computer Science and Economics, BS

The combined major in computer science and economics integrates fundamental economics courses with a strong programming foundation. Studying both the behavior of individuals and the collective behavior of industries and governments, students will utilize computing skills to address complex issues within the field.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200 or ECON 1000	Leadership Skill Development Economics at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5

CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

Economics Requirements

Code	Title	Hours
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Required Economics Courses

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4

Economics Electives

Complete four economics electives with no more than two below 3000: 16

ECON 1230	Healthcare and Medical Economics	
ECON 1240	Economics of Crime	
ECON 1290	History of the Global Economy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3424	Law and Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 4635	International Economics	
ECON 4681	Information Economics and Game Theory	

Economics Capstone

ECON 4692	Senior Economics Seminar	4
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Integrative Course Requirement

Code	Title	Hours
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The following courses are used in other areas of the major:

IS 2000	Principles of Information Science	4
ECON 2560	Applied Econometrics	4

Supporting Courses

Code	Title	Hours
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Mathematics

MATH 1231	Calculus for Business and Economics	4
or MATH 1341	Calculus 1 for Science and Engineering	

Computing and Social Issues

Complete one of the following: 4

SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science English Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one course from the following:

ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six general electives.		24

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Exploring Creative Expression and Innovation
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study**Sample Patterns:****Four Year, Two Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 1800 and CS 1802	5	IS 2000	4	CS 3500	4		
CS 2500 and CS 2501	5	ECON 1116	4				
ECON 1115	4	MATH 1231 or 1341	4				
ENGW 1111	4						
	19		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 2800 and CS 2801	5	CS 1210	1	ENGW 3302, 3308, 3311, or 3315	4	Co-op	
CS 3000	4	CS elective 1	4	Elective	4		
ECON 2315	4	ECON 2316	4				
ECON 2350	4	ECON elective 1	4				
		Elective	4				
	17		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		ECON elective 2	4	Elective	4		
		Computing and social issues requirement	4				
		ECON 2560	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		CS elective 3	4		
		ECON 4692	4	Elective	4
		ECON elective 3	4	Elective	4
		ECON elective 4	4		
	0		16		8

Total Hours: 135

Five Year, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	

CS 1800 and CS 1802	5	IS 2000	4		
CS 2500 and CS 2501	5	ECON 1116	4		
ECON 1115	4	MATH 1231 or 1341	4		
ENGW 1111	4				
	19		17		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	Vacation		Co-op	
CS 3500	4	CS 2800 and CS 2801	5				
ECON 2315	4	CS 3200	4				
ECON 2350	4	ECON 2316	4				
		ECON elective 1	4				
	16		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 1	4	ENGW 3302, 3308, 3311, or 3315	4	Co-op	
		ECON elective 2	4	Elective	4		
		Computing and social issues requirement	4				
		ECON 2560	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		ECON elective 3	4	Elective	4		
		ECON elective 4	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		CS elective 3	4
		ECON 4692	4
		Elective	4
		Elective	4
	0		16

Total Hours: 135

Computer Science and English, BS

The computer science and English combined major focuses on the increasingly interdisciplinary processes of creating, interpreting, and analyzing texts and programs. Students will combine communication

and critical judgment, gaining the creativity and adaptability necessary to utilize technology in literary studies, and apply humanities skills to solve programming problems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
Computing Focus		
Students are required to complete one of the following foci (two courses total):		8
<i>Focus 1: Natural Language Processing</i>		
CS 3800	Theory of Computation	
CS 4120	Natural Language Processing	
<i>Focus 2: Programming Languages</i>		
CS 3800	Theory of Computation	
CS 4400	Programming Languages	
<i>Focus 3: Analytics</i>		
DS 4100	Data Collection, Integration, and Analysis	
DS 4200	Information Presentation and Visualization	
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1

Computer Science/Information Science Elective Course		
IS 2000	Principles of Information Science	4
or CS 4500	Software Development	

Computer Science Elective Courses		
With advisor approval, a directed study, project study, or appropriate graduate-level course may also be taken as an upper-division elective.		
Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	

ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	
Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	

ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2510	Horror Fiction	
ENGL 2520	Science Fiction	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2620	What Is Nature? (Abroad)	
ENGL 2690	Boston in Literature	
ENGL 3427	The Literature of Science	
ENGL 3487	Film and Text (Abroad)	
ENGL 3582	Children's Literature	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 4070	Topics in Genre	

Writing

Complete one of the following:		4
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives.	8
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Integrative Course Requirement

This course will not be allowed to double-count in the Theories and Methods section above.

Code	Title	Hours
ENGL 3340	Technologies of Text	4

Supporting Course

Code	Title	Hours
Complete one of the following:		
SOCL 4528	Computers and Society	4
SOCL 3485	Environment, Technology, and Society	

SOCL 1280	The 21st-Century Workplace
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics
PHIL 1145	Technology and Human Values
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks

ENGL 1400	4 English literary period 1	4
ENGW 1111	4	
		19
		17
		8
		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Strand elective 1	4	ENGW 3302, 3309, 3310, or 3315	4	Co-op	4
CS 3200	4	CS 1210	1	Elective	4		
English literary period 2	4	IS 2000 (or English Category or Elective)	4				
English category or elective	4	English category or elective	4				
		ENGL 3340	4				
		16		17		8	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Strand elective 2	4	Elective	4	Co-op	4
		English category or elective	4	Elective	4		
		English category or elective	4				
		Computing and social issues	4				
		THTR 1170	1				
		0		17		8	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		CS 4500 (or English Category or Elective)	4	Elective	4
		ENGL 4710 or 4720	4	Elective	4
		CS elective	4		
		Elective	4		
		0		16	8

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	ENGL 1160 or 1410	4	Elective	4		
CS 2500 and CS 2501	5	Elective	4				

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing	4
	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one course from the following:

ENGW 3302	Advanced Writing in the Technical Professions
ENGW 3309	Advanced Writing in the Humanities
ENGW 3310	Advanced Writing in Literature
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Exploring Creative Expression and Innovation
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

132 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	ENGL 1160 or 1410	4	Elective	4		
CS 2500 and CS 2501	5	Elective	4				

ENGW 1111	4	English literary period 1	4				
ENGL 1400	4						
	19		17		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 3200	4	Vacation		Co-op	
CS 3500	4	CS 1210	1				
English literary period 2	4	IS 2000 (or English Category or Elective)	4				
English category or elective	4	English category or elective	4				
		ENGL 3340	4				
	16		17		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Strand elective 1	4	ENGW 3302, 3309, 3310, or 3315	4	Co-op	
		English category or elective	4	Elective	4		
		English category or elective	4				
		THTR 1170	1				
		Elective	4				
	0		17		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Strand elective 2	4	Elective	4	Co-op	
		Computing and social issues	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0
Year 5							
Fall	Hours	Spring	Hours				
Co-op		CS 4500 (or English Category or Elective)	4				
		ENGL 4710 or 4720	4				
		CS elective	4				
		Elective	4				
	0		16				

Total Hours: 134

Computer Science and Environmental Science, BS

The computer science and environmental science combined major focuses on geological processes that greatly impact the earth, atmosphere, and water in oceans, lakes, and rivers. Understanding these processes requires acquisition and computational analysis of large amounts of data—underscoring the natural relationship between computer science and environmental science.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Environmental Science Courses

Code	Title	Hours
Environmental Science Required Courses		
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4
ENVR 4900 or ENVR 4997	Earth and Environmental Science Capstone Senior Thesis	1
Complete one of the following sequences:		5
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	
Environmental Science Integrative Courses		
Complete at least two of the following:		8-10
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
ENVR 3418	Geophysics	
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
Environmental Science Electives		
If you complete more than two environmental science integrative courses (above), they will count as environmental science electives.		
Complete four of the following:		16-20
ENVR 1101	Environmental Science	
ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	
ENVR 4504	Environmental Pollution	
ENVR 4563	Advanced Spatial Analysis	
ENVR 5190	Soil Science	
ENVR 5201	Geologic Field Seminar	
ENVR 5230 and ENVR 5231	Structural Geology and Lab for ENVR 5230	
ENVR 5240 and ENVR 5241	Sedimentary Basin Analysis and Lab for ENVR 5240	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
ENVR 5270 and ENVR 5271	Glacial and Quaternary History and Lab for ENVR 5270	

Supporting Courses

Code	Title	Hours
Calculus		
MATH 1251 or MATH 1341	Calculus and Differential Equations for Biology 1 Calculus 1 for Science and Engineering	4
MATH 1252 or MATH 1342	Calculus and Differential Equations for Biology 2 Calculus 2 for Science and Engineering	4
MATH 3081	Probability and Statistics	4

Chemistry

CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
Advanced Writing in the Disciplines		
Complete one course from the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six general electives.		24

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

138 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	ENVR 1202 or 2310	4	Elective	4		
CS 2500 and CS 2501	5	ENVR 1203 or 2311	1				
ENVR 1200 (ENVR 1201 (Lab if offered))	4	CS 3200	4				
ENGW 1111	4	Elective	4				
	19		18		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 5210 or 5250	4	CHEM 1214 and CHEM 1215 and CHEM 1216	5	MATH 1252 or 1342	4	Co-op	
CHEM 1211 and CHEM 1212 and CHEM 1213	5	MATH 1251 or 1341	4	Elective	4		
CS 3000	4	ENVR elective	4				
Elective	4	CS elective	4				
	17	CS 1210	1				
	17		18		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	MATH 3081	4	Co-op	
		ENVR elective	4	ENGW 3302	4		
		ENVR elective	4				
		ENVR integrative (take lab if offered)	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		CS 4500 and CS 4501	4	Elective	4
		ENVR 4900 (or ENVR 4997 (if short of credit hours))	1	Elective	4

ENVR integrative	4		
ENVR elective	4		
Computing and social issues	4		
	0	17	8

Total Hours: 138

Five Years, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	Elective	4				
ENVR 1200 (ENVR 1201 (if offered))	4	ENVR 1202 or 2310	4				
ENGW 1111	4	ENVR 1203 or 2311	1				
	19		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Co-op	0
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CS 3000	4				
ENVR 5210 or 5250	4	ENVR elective	4				
Elective	4	CS 1210	1				
	17	CS elective	4				
	17		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 1251 or 1341	4	MATH 3081	4	Co-op	0
		ENVR integrative (take lab if offered)	4	Elective	4		
		ENVR elective	4				
		THTR 1170	1				
		Elective	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	Elective	4	Co-op	0

MATH 1252 or 1342	4	Elective	4
ENGL 3302	4		
ENVR integrative	4		
	0	16	8
			0

Year 5

Fall	Hours	Spring	Hours
Co-op		CS 4500 and CS 4501	4
		ENVR 4900 (ENVR 4997 (if short of credit hours))	1
		ENVR elective	4
		ENVR elective	4
		Computing and social issues	4
	0	17	

Total Hours: 138

Computer Science and Game Development, BS

The computer science and game development combined major focuses on the specific skills needed to succeed in the highly competitive game industry. Students will engage in building and developing games and playable media experiences while completing courses in computer science and specialized game technology and design. Interdisciplinary courses enable students to develop their creative and entrepreneurial abilities, as well as create a strong portfolio of game pieces.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3520	Programming in C++ (Integrative course)	4
CS 3540	Game Programming (Integrative course)	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
CS 4300	Computer Graphics (Integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
CS 4850	Building Game Engines (Integrative course)	4

Computer Science Elective Course

CS 4150 or IS 4300	Game Artificial Intelligence (Integrative course) or Human Computer Interaction	4
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Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Game Design Courses

Code	Title	Hours
Game Design		
GAME 1110	Games and Society	4
GAME 2010	The Business of Games	4
GAME 2500	Foundations of Game Design	4
GAME 3700	Rapid Idea Prototyping for Games	4
GAME 3800	Game Concept Development and Production	4
GAME 4700	Game Design Capstone 1	4
GAME 4701	Game Design Capstone 2	4

Game Design Elective

Complete one GAME course other than GAME 2150, GAME 3150, or GAME 3250.	4
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Computer Science/Game-Related Electives

Complete two courses from the following:	8
Any course in GAME subject area except GAME 2150, GAME 3150, or GAME 3250	
Any course in the ARTD, ARTE, ARTF, ARTG, ARTH, and ARTS subject areas	
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	
MATH 1342	Calculus 2 for Science and Engineering
ECON 2350	Statistics
or PSYC 2320	Statistics in Psychological Research

Supporting Courses

Code	Title	Hours
Psychology		
PSYC 1101	Foundations of Psychology	4
Mathematics		
A grade of C– or higher is required:		
MATH 1260	Math Fundamentals for Games (Integrative course)	4
MATH 1341	Calculus 1 for Science and Engineering	4

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
Students are strongly encouraged to take Advanced Writing in the Technical Professions (ENGW 3302) but may substitute Interdisciplinary Advanced Writing in the Disciplines (ENGW 3315).		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete four general electives.		16

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Understanding Societies and Institutions
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Four Years, Two Co-ops

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MATH 1260	4	MATH 1341	4		
CS 2500 and CS 2501	5	Elective	4				
GAME 2500 (*)	4	GAME 1110	4				

ENGW 1111	4						
	19		17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3520 (*)	4	CS 1210	1	Elective	4	Co-op	
CS 3000	4	CS 3540 (*)	4	Elective	4		
GAME 2010 (*)	4	CS 3650	4				
GAME 3700 (*)	4	GAME 3800	4				
		CS/game elective	4				
	16		17		8		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4850 (*)	4	Co-op	0	Co-op	0
		CS 4300	4				
		ENGW 3302	4				
		PSYC 1101	4				
		THTR 1170	1				
	0		17		0		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
GAME 4700 (*)	4	GAME 4701 (*)	4			Vacation	0
CS 3700	4	Computer science elective	4				
CS 4500 and CS 4501	4	Game elective	4				
CS/game elective	4	Elective	4				
	16		16				0

Total Hours: 134

*Indicates courses that must be taken in the semester listed.

Computer Science and History, BS

The computer science and history combined major offers students the opportunity to gain both historical knowledge and a broad range of related analytical skills in both the humanities and computer science. You'll define a history course cluster according to a thematic principle, with a focus on quantitative analysis in the field, complementing your foundation in programming.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of upper-division CS, IS, or DS courses that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

History Courses

Code	Title	Hours
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History Required Courses

HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

History Electives

Complete one introductory course from the following:

AFAM 1140	Introduction to African-American History	4
ASNS 1150	East Asian Studies	
HIST 1120	Public History, Public Memory	
HIST 1130	Introduction to the History of the United States	

HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1190	Picturing Modernity: The Photographic Image in Culture and Society	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	

Complete one course from the following: 4

HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 1389	History of Espionage 1: Antiquity to World War II	
HIST 2330	Colonial and Revolutionary America	

Complete three intermediate/advanced-level courses: 12

Select from any HIST course numbered 2303 or above.

Complete one advanced-level course: 4

Select from any HIST course numbered 3000 or above.

History Capstone Seminar or Senior Project

Complete one capstone experience from the following: 4

HIST 4701	Capstone Seminar	
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Public history concentrators may also select from the following:

HIST 4903	Fieldwork in History 1	
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Cluster Requirement

Note: Four of the six courses chosen as history electives must create a history cluster of related courses. The history cluster is subject to department approval.

Integrative Course Requirement

Code	Title	Hours
HIST 2211	The World Since 1945	4

Supporting Courses

Code	Title	Hours
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Research Methods

Complete one course from the following: 4

ECON 2350	Statistics	
POLS 2400	Quantitative Techniques	
PSYC 2320	Statistics in Psychological Research	
SOCL 2320	Statistical Analysis in Sociology	
ENVR 3300	Geographic Information Systems	
ENVR 5260	Geographical Information Systems	

Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks
PHIL 1145	Technology and Human Values
SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

This requirement is satisfied by HIST 2302 taken in conjunction with HIST 2301.

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science and History GPA/Credit Requirement

Complete 98 semester hours in the major with a minimum 2.000 GPA

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Writing-Intensive in the Major
- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

135 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	IS 2000	4	Elective	4		
CS 2500 and CS 2501	5	CS 3200	4				
ENGW 1111	4	Introductory history elective	4				
HIST 1200	1						
HIST 1201	4						
		20	17	8	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	Elective	4	Co-op	
HIST 2301	4	Elective	4	Elective	4		
HIST 2302	1	CS elective 1	4				
History Pre-1800 elective	4	Intermediate history elective 1	4				
Research methods requirement	4	Intermediate history elective 2	4				
		17	17	8	0		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		Intermediate history elective 3	4	Elective	4		
		Advanced history elective	4				
		Computing and social issues	4				
		THTR 1170	1				
		0	17	8	0		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 3	4	Elective	4		
		History capstone seminar or senior project	4	Elective	4		
		History integrative requirement	4				
		CS elective 4	4				
		0	16	8			

Total Hours: 136

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	IS 2000	4				
ENGW 1111	4	Introductory history elective	4				
HIST 1200	1						
HIST 1201	4						
		20	17	0	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		Vacation	
CS 3000	4						
CS 3500	4						
HIST 2301	4						
HIST 2302	1						
Research methods requirement	4						
	18		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
History Pre-1800 elective	4	Co-op		Co-op		Elective	4
Intermediate history elective 1	4					Elective	4
Elective	4						
CS elective 1	4						
THTR 1170	1						
	17		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	Co-op		Co-op		Elective	4
Intermediate history elective 2	4					Elective	4
Computing and social issues	4						
Elective	4						
	16		0		0		8

Year 5			
Fall	Hours	Spring	Hours
CS elective 3	4	CS elective 4	4
Intermediate history elective 3	4	Advanced history elective	4
Elective	4	History capstone seminar or senior project	4
Elective	4	History integrative requirement	4
	16		16

Total Hours: 136

Computer Science and Journalism, BS

The computer science and journalism combined major supports students who understand that journalism now takes place in both print and the digital world. Students will learn the principles, practices, and responsibilities of the journalism profession while gaining a deep

understanding of the systems and technologies that support digital media.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

At least one of these must be from the following list:

IS 4200 Information Retrieval

IS 4300 Human Computer Interaction

Journalism Major Requirements

Students transferring from outside institutions must complete a minimum of five 4-credit journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Issues in Journalism	

Code	Title	Hours
Journalism Courses		
A grade of C or higher is required:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4

Required Journalism

JRNL 1150	Understanding Today's News	4
JRNL 2350	The History of Journalism: How the News Became the News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Issues in Journalism	4

Journalism Electives

Complete two JRNL courses. 8

Journalism-Related Requirement

HIST 1130	Introduction to the History of the United States	4
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Supporting Courses

Code	Title	Hours
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Mathematics Requirement

MATH 1341	Calculus 1 for Science and Engineering	4
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	

Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

JRNL 2301	Visual Storytelling in Journalism	4
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Required General Electives

Code	Title	Hours
Complete seven general electives.		28

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Interpreting Culture
- Engaging Difference and Diversity
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and JRNL courses

Program Requirement

134 total semester hours required

Plan of Study**Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5				
JRNL 1150	4	HIST 1130	4				
ENGW 1111	4						
		19		18		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op	0	Co-op	0	Vacation	0
CS 3500	4						
JRNL 2201	4						
MATH 1341	4						
Elective	4						
		17		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op	0	Co-op	0	Elective	4
CS 3000	4					Elective	4
Computer science elective	4						
Elective	4						
		16		0		0	

Year 4									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
JRNL 2350	4	Co-op	0	Co-op	0	Elective	4		
JRNL 3610	4					Elective	4		
Computer science elective	4								
Elective	4								
		16			0			0	8

Year 5			
Fall	Hours	Spring	Hours
JRNL 3550	4	CS 4000	1
Journalism elective	4	CS 4500 and CS 4501	4
Computer science elective	4	JRNL 4650	4
Computer science elective	4	Journalism elective	4
		Computing and social issues	4
		16	17

Total Hours: 135

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0		
CS 1800 and CS 1802	5	JRNL 1101 and JRNL 1102	5	MATH 1341	4				
CS 2500 and CS 2501	5	CS 3200	4						
JRNL 1150	4	HIST 1130	4						
ENGW 1111	4								
		19			18			8	0

Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
CS 1210	1	Co-op		Co-op		Elective	4		
JRNL 2201	4					Elective	4		
CS 3000	4								
Computer science elective	4								
Elective	4								
		17			0			0	8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Computer science elective	4	Co-op		Co-op		Elective	4
Computer science elective	4					Elective	4

JRNL 2301	4						
JRNL 2350	4						
THTR 1170	1						
		17			0	0	8

Year 4									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
CS 4500 and CS 4501	4	JRNL 4650	4	Elective	4				
JRNL 3610	4	Computing and social issues	4	Elective	4				
JRNL 3550	4	Journalism elective	4						
CS elective	4	Journalism elective	4						
		16			16			8	0

Total Hours: 135

Computer Science and Linguistics, BS

The computer science and linguistics combined major provides students with extensive background in the formal structures of natural (human) languages, as well as methods and applications of linguistic and psycholinguistic analyses of human language data. This is combined with an emphasis in computer science on artificial intelligence and natural language processing techniques. The major provides excellent preparation for work or more advanced degrees focusing on computational linguistics, natural language processing, speech perception, spoken language interfaces, artificial intelligence, and a wide array of related fields.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5

CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
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Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation (Integrative course)	4
CS 4100	Artificial Intelligence (Integrative course)	4
CS 4120	Natural Language Processing (Integrative course)	4
CS 4400	Programming Languages (Integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 4 credits of CS, IS, or DS courses that are not already required. Choose courses within the following range: 4

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Linguistics Requirements

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis (Integrative course)	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax (Integrative course)	4
Intermediate/Advanced Linguistics Elective		
LING 3424 or LING 3452	Morphology Semantics	4
Psychology Requirements		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
Laboratory/Directed Study		
Complete one of the following:		4
LING 4891	Research Seminar in Linguistics	
LING 4991	Directed Study Research	
PSYC 4610	Laboratory in Psycholinguistics	
Seminar Requirement		
LING 4654 or PSYC 4658	Seminar in Linguistics Seminar in Psycholinguistics	4
Linguistics Elective		
Complete one of the following:		4
DEAF 2700	ASL Linguistics	

LING 3420	Phonetics
LING 3424	Morphology
LING 3434	Bilingualism
LING 3442	Sociolinguistics
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics
LING 4654	Seminar in Linguistics
PSYC 3466	Cognition
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience

With prior approval, directed study research, independent study, and Honors Project courses can also be counted:

LING 4891	Research Seminar in Linguistics
LING 4970	Junior/Senior Honors Project 1
LING 4971	Junior/Senior Honors Project 2
LING 4991	Directed Study Research
PSYC 4991	Directed Study Research

Supporting Courses

Code	Title	Hours
Mathematics Requirement		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3315	Advanced Writing in the Technical Professions Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Complete five general electives.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Interpreting Culture
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Engaging Difference and Diversity
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, One Co-op in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation
CS 1800 and CS 1802	5	LING 2350	4			
CS 2500 and CS 2501	5	Elective	4			
LING 1150	4	PSYC 1101	4			
ENGW 1111	4					
		19	17	0		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	CS 1210	1	Elective	4	Co-op
MATH 1341	4	CS 3000	4	Elective	4	
LING 3412	4	CS 3800	4			
PSYC 3464	4	LING 3422	4			
		PSYC 2320	4			
		16	17	8		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4120	4	Elective	4	Vacation
		CS 4400	4	Elective	4	
		LING 3450	4			
		ENGW 3302	4			
		THTR 1170	1			
		0	17	8		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4100	4	Elective	4	Co-op
		CS elective	4	Elective	4	
		LING lab (or directed study)	4			
		LING 3424 or 3452	4			
		0	16	8		0
Year 5						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4500	4			
		LING seminar	4			

LING seminar	4	CS elective	4
Computing and social issues	4	LING elective	4
LING 3424 or 3452	4	LING lab (or directed study)	4
		16	16

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation
CS 2500 and CS 2501	5	LING 2350	4			
CS 1800 and CS 1802	5	PSYC 1101	4			
LING 1150	4	Elective	4			
ENGW 1111	4					
		19	17	0		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	CS 1210	1	Vacation	0	Co-op
MATH 1341	4	CS 3000	4			
LING 3412	4	CS 3800	4			
PSYC 3464	4	LING 3422	4			
		PSYC 2320	4			
		16	17	0		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4120	4	Elective	4	Co-op
		CS 4400	4	Elective	4	
		LING 3450	4			
		ENGW 3302	4			
		THTR 1170	1			
		0	17	8		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4100	4	Elective	4	Co-op
		CS elective	4	Elective	4	
		LING lab (or directed study)	4			
		LING 3424 or 3452	4			
		0	16	8		0
Year 5						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4500	4			
		LING seminar	4			

Computing and social issues	4
LING elective	4
0	16

Total Hours: 134

Computer Science and Mathematics, BS

The computer science and mathematics combined major was the first dual major created by the college. The mathematics requirements focus on courses that have computing applications or form the basis for further studies in mathematical theory. The program emphasizes the strong ties between computer science and mathematics that date back to the origins of machine computation in the 1930s and 1940s—and persist to this day.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800 (Integrative course)	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4300	Computer Graphics (Integrative course) ¹	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
Presentation Requirement		

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete eight credits of CS, IS or DS classes that are not already required. Choose courses within the following ranges:	8
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CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

¹ CS 4300 satisfies the capstone requirement.

Mathematics Courses

Code	Title	Hours
Calculus Courses		
MATH 1341	Calculus 1 for Science and Engineering (a grade of C– or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C– or higher is required)	4
MATH 2321	Calculus 3 for Science and Engineering	4
Mathematics Courses		
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
MATH 3175	Group Theory	4
MATH 3527	Number Theory 1	4

Mathematics Electives

Complete three courses in the following range:	12
MATH 3001 to MATH 4999 but not MATH 4000	

Supporting Course

Code	Title	Hours
Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	4
PHIL 1145	Technology and Human Values	4
SOCL 1280	The 21st-Century Workplace	4
SOCL 3485	Environment, Technology, and Society	4
SOCL 4528	Computers and Society	4

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
	Complete seven general electives.	28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Elective	4	Vacation	
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	MATH 2321	4		
CS 2500 and CS 2501	5	MATH 1342	4				
MATH 1341	4	Elective	4				
ENGW 1111	4						
		19			18		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Elective	4	Co-op	
MATH 2331	4	CS 3000	4	MATH 3081	4		
MATH 2341	4	CS elective	4				
CS 3800	4	MATH 3527	4				
		MATH elective	4				
		16			17		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Math elective	4	Elective	4	Co-op	
		CS 4300	4	Elective	4		
		ENGW 3302	4				
		MATH 3175	4				
		THTR 1170	1				
		0			17		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4500 and CS 4501	4	Elective	4	Co-op	0
		MATH 3527	4	Elective	4		
		MATH elective	4				
		CS elective	4				
		0			16		
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS elective	4				

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours		
Co-op		CS 4500 and CS 4501	4	Elective	4		
		CS elective	4	Elective	4		
		Math elective	4				
		Computing and social issues	4				
		0			16		

Total Hours: 135

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 2800 and CS 2801	5				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
CS 1200	1						
		19			18		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 3000	4	Vacation	0	Co-op	0
MATH 2321	4	MATH 2331	4				
MATH 2341	4	MATH 3081	4				
Elective	4	CS 1210	1				
		Elective	4				
		16			17		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	Elective	4	Co-op	0
		CS 4300	4	Elective	4		
		MATH 3175	4				
		ENGW 3302	4				
		THTR 1170	1				
		0			17		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4500 and CS 4501	4	Elective	4	Co-op	0
		MATH 3527	4	Elective	4		
		MATH elective	4				
		CS elective	4				
		0			16		
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS elective	4				

Computing and social issues	4
MATH elective	4
MATH elective	4
0	16

Total Hours: 135

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 2800 and CS 2801	5				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
CS 1200	1						
	19		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
MATH 2321	4						
MATH 2341	4						
CS 1210	1						
Elective	4						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	Elective	4
MATH 2331	4					Elective	4
MATH 3081	4						
Elective	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op	0	Co-op	0	Elective	4
CS 4300	4					Elective	4
MATH 3527	4						
ENGW 3302	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CS 4500 and CS 4501	4	CS elective	4
MATH 3175	4	Computing and social issues	4
MATH elective	4	MATH elective	4

CS elective	4	MATH elective	4
	16		16

Total Hours: 135

Computer Science and Media Arts, BS

The computer science and media arts combined major is ideal for creative students who love technology. Students will acquire a solid foundation in both fields through curriculum that spans photography, animation, video, database design, computer graphics, and human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4300	Computer Graphics	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
IS 4300	Human Computer Interaction	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:	8
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Media Arts Courses

Code	Title	Hours
Required Media Arts Courses		
ARTF 1120	Observational Drawing	4
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	4
ARTD 2100	Narrative Basics	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4

Media Arts Electives

Complete six of the following:	24
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)

Basics

ARTD 2360	Photo Basics (with optional ARTD 2361)
ARTD 2370	Animation Basics (with optional ARTD 2371)
ARTD 2380	Video Basics (with optional ARTD 2381)

Photography

ARTD 3460	Photography 1
ARTD 4565	Photography 2
ARTD 4660	Studio Photography
ARTD 4661	Alternative Photographic Processes

Animation

ARTD 3470	Animation 1
ARTD 3471	Virtual Environment Design
ARTD 3472	Character Design for Animation
ARTD 3473	Animation for Games
ARTD 4570	Animation 2
ARTD 4575	Animation 3
ARTD 4577	Digital Sculpture and Model Making

Video

ARTD 3480	Video: Sound and Image
ARTD 5582	Collaborative Video and Community Engagement

History

ARTH 2212	Survey of the Still and Moving Image
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Media Arts Capstone Requirement

ARTD 4530	Media Arts Degree Project 1	4
ARTD 4670	Media Arts Degree Project 2	4

Supporting Courses

Code	Title	Hours
Mathematics Requirement		
MATH 2331	Linear Algebra	4
Computing and Social Issues		
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Integrative Courses

Code	Title	Hours
The following courses are fulfilled through the computer science requirement:		
CS 4300	Computer Graphics	
IS 4300	Human Computer Interaction	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Integrating Knowledge and Skills Through Experience
- Demonstrating Thought and Action in a Capstone

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

131 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4	Elective	4		
CS 2500 and CS 2501	5	ARTF 1120	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 1124 (with optional ARTF 1125)	4				
ENGW 1111	4						
		19	17	8	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		Elective	4
IS 4300	4					Elective	4
CS 3000	4						
ARTF 2220 (with optional ARTF 2221)	4						
ARTD 2100	4						
		17	0	0	8		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op	0	Co-op	0	Vacation	0
MATH 2331	4						
Computer science elective	4						
Media arts elective	4						
Media arts elective	4						
		17	0	0	0		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4300	4	Co-op	0	Co-op	0	Vacation	0
Media arts elective	4	ENGW 3302	4				
Computer science elective	4						
Media arts elective	4						
Media arts elective	4						
		16	4	0	0		
Year 5							
Fall	Hours	Spring	Hours				
ARTD 4530 (*)	4	ARTD 4670 (*)	4				

CS 4500 and CS 4501	4	Computing and social issues	4
Media arts elective	4	Elective	4
Media arts elective	4	Elective	4
		16	16

Total Hours: 138

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510	4	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 2511	1	Elective	4		
CS 2500	4	CS 3200	4				
CS 2501	1	ARTF 1120	4				
ARTF 1122 (with optional ARTF 1123)	4	ARTF 1124 (with optional ARTF 1125)	4				
ENGW 1111	4						
		19	17	8	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		MATH 2331	4
IS 4300	4					Elective	4
CS 3000	4						
ARTF 2220 (with optional ARTF 2221)	4						
ARTD 2100	4						
		17	0	0	8		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
THTR 1170	1	Co-op	0	Co-op	0	Elective	4
CS 4300	4	ENGW 3302	4			Media arts elective	4
Computer science elective	4						
Media arts elective	4						
Media arts elective	4						
		17	4	0	0		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours		
ARTD 4530	4	ARTD 4670	4	Elective	4		
CS 4500 and CS 4501	4	Computing and social issues	4	Elective	4		

Computer science elective	4	Media arts elective	4	
Media arts elective	4	Media arts elective	4	
	16		16	8

Total Hours: 138

*Indicates course must be taken in the term listed.

Computer Science and Music with Concentration in Music Technology, BS

The computer science and music combined major with concentration in music technology focuses on the creative application of digital sound technologies to a broad range of artistic, social, and industrial purposes. An emphasis is maintained throughout on imaginative exploration, collaboration across disciplines, and real-world experience. It is designed to give students a firm foundation in music and computing for digital audio technologies. This program is recommended for students with a strong background in music prior to entering Northeastern.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

IS 4300	Human Computer Interaction (Integrative)	4
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Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 8 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Music Courses

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4

Music in Context

MUSC 1001	Music in Everyday Life	4
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Contemporary

Complete one of the following: 4

MUSC 2101 Black Popular Music

MUSC 2310 Popular Music Since 1945

MUSC 2315 History of Electronic Music

MUSC 2320 40,000 Years of Music Technology

MUSC 3560 Topics in Music since 1900

MUSI 3401 Hip Hop in the Music Industry

Music Technology

MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
MUSC 2350	Acoustics and Psychoacoustics of Music	4

Music Industry

Complete one of the following: 4

MUSI 1230 Introduction to Music Industry

MUSI 2331 Music Recording 2

MUSI 3335 Copyright Law for Musicians

Music Technology Electives

Complete two of the following: 8

MUST 4520 Interactive Music Programming

MUST 4610 Composition for Electronic Instruments

MUST 4XXX Composing with Image and Sound

MUST 4XXXX Spatial Audio

MUST 3540 Special Topics in Music Technology

Music Technology Capstone

MUST 4611	Music Technology Capstone/Senior Recital	4
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Foundations of Psychology

Code	Title	Hours
PSYC 1101	Foundations of Psychology	4

Computing and Social Issues

Code	Title	Hours
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUPath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Interpreting Culture
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

133 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MUST 1220 (*)	4	CS 3200	4		
CS 2500 and CS 2501	5	MUSC 1202 (*)	4				
MUSC 1201 (*)	4	MUSC 2350	4				
ENGW 1111	4						
		19		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		ENGW 3302	4
MUSC 1001	4					Elective	4
CS 3000	4						
MUST 1301 (*)	4						
Elective	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 3541	4	Co-op		0 Co-op		0 Vacation	0
MUST 2431	4						
Contemporary music requirement*	4						
Computer science elective	4						
		16		0		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 4300	4	Co-op		0 Co-op		0 Vacation	0
PSYC 1101	4						
THTR 1170	1						
Music technology elective*	4						
Computer science elective	4						
		17		0		0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 4500 and CS 4501	4	MUST 4611 (*)	4				
Music technology elective*	4	Elective	4				

Computing and social issues	4	Music industry elective	4
Elective	4	Elective	4
	16		16

Total Hours: 134

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	MUST 1220 (*)	4	CS 3200	4		
CS 2500 and CS 2501	5	MUSC 1202 (*)	4				
MUSC 1201 (*)	4	MUSC 2350	4				
ENGW 1111	4						
	19		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		ENGW 3302	4
MUSC 1001	4					Elective	4
CS 3000	4						
MUST 1301 (*)	4						
Computer science elective	4						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSC 3541	4	Co-op		Co-op		PSYC 1101	4
MUST 2431	4					Elective	4
Contemporary music requirement*	4						
Music technology elective*	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
IS 4300	4	MUST 4611 (*)	4	Elective	4
CS 4500 and CS 4501	4	Elective	4	Elective	4
THTR 1170	1	Computing and social issues	4		
Music technology elective*	4	Music industry elective	4		

Computer science elective	4		
	17	16	8

Total Hours: 134

*Indicates course must be taken in the term listed.

Computer Science and Philosophy, BS

The computer science and philosophy combined major offers an opportunity to obtain a fluency in formal logic, including logical proofs and the ability to represent arguments clearly and evaluate them for cogency. Students will find that logic plays a fundamental role in computer science as they experience an in-depth programming foundation. The philosophy curriculum also focuses on oral and written communication, as well as ethical and social issues related to computing and information technologies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4

CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4
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Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken for upper-division electives.

Complete 8 credits of upper-division CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Philosophy Courses

Code	Title	Hours
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Philosophy Required Courses

PHIL 1115	Introduction to Logic	4
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PHIL 2325	Ancient Philosophy and Political Thought	4
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or POLS 2325 Ancient Philosophy and Political Thought

or PHIL 2330 Modern Philosophy

PHIL 1145	Technology and Human Values	4
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PHIL 4515	Advanced Logic	4
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Philosophy Restricted Electives

Take two courses, at least one of which is at the 4000 or 5000 level, from the following:

PHIL 3343 Existentialism

PHIL 3435 Moral Philosophy

PHIL 3460 Philosophy and Literature

PHIL 4390 Cults and Sects

PHIL 4500 Theory of Knowledge

PHIL 4510 Philosophy of Science

PHIL 4535 Philosophy of Mind

PHIL 4547 Seminar: Apocalypticism

PHIL 4606 Seminar: Theories and Methods in Religious Studies

PHIL 4903 Seminar in Religion

PHIL 4906 Topics in Religious Studies

PHIL 5001 Global Justice

PHIL 5011 Comparative Religious Ethics

Electives

Take three PHIL courses. 12

Integrative Course Requirement

Code	Title	Hours
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These courses will double count in other areas of your major.

CS 3800 Theory of Computation

PHIL 4515 Advanced Logic

Computer Science English Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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or ENGW 1102 First-Year Writing for Multilingual Writers

Advanced Writing in the Disciplines

Complete one course from the following: 4

ENGW 3302 Advanced Writing in the Technical Professions

ENGW 3309 Advanced Writing in the Humanities

ENGW 3315 Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete 11 general electives.		44

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing-Intensive in the Major
- Interpreting Culture
- Understanding Societies and Institutions
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	Elective	4		
CS 2500 and CS 2501	5	PHIL 2325, POLS 2325, or PHIL 2330	4				
ENGW 1111	4	Elective	4				
PHIL 1115	4						
		19	18	8	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS elective 1	4	ENGW 3302, 3309, or 3315	4	Co-op	
PHIL 1145	4	PHIL elective 2	4	Elective	4		
PHIL elective 1	4	PHIL elective 3	4				
Elective	4	Elective	4				

	CS 1210	1					
	16	17	8	0			

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	Elective	4	Co-op	
		CS elective 2	4	Elective	4		
		PHIL 4515	4				
		Elective	4				
		THTR 1170	1				
	0	17	8	0			

Total Hours: 135

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1801	4	CS 2800 and CS 2801	5				
CS 2500 and CS 2501	5	PHIL 2325, POLS 2325, or PHIL 2330	4				
ENGW 1111	4	Elective	4				
PHIL 1115 or 1215	4						
	18	18	0	0			

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS elective 1	4	Vacation		Co-op	
CS 3500	4	PHIL elective 1	4				
PHIL 1145	4	PHIL elective 2	4				
Elective	4	Elective	4				
		CS 1210	1				
	16	17	0	0			

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	ENGW 3302, 3309, or 3315	4	Co-op	
		PHIL 4515	4	Elective	4		
		PHIL elective 3	4				

	Elective	4					
	THTR 1170	1					
	0	17	8	0			

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		PHIL intermediate/advanced elective	4	Elective	4		
		Elective	4				
		Elective	4				
	0	16	8	0			

Year 5

Fall	Hours	Spring	Hours
Co-op		CS 4500	4
		PHIL capstone	4
		Elective	4
		Elective	4
	0	16	

Total Hours: 134

Computer Science and Physics, BS

The computer science and physics combined major brings together three disciplines: computer science, physics, and mathematics. The mathematics requirements serve as a foundation for both computer science and physics. From hands-on experience with sophisticated physics instruments, to mathematical theory, to the latest computational innovations, our interdisciplinary approach will prepare students for the myriad challenges in today's rapidly changing world.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Computer Science Senior Seminar

THTR 1170	The Eloquent Presenter	1
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Physics Courses

Code	Title	Hours
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Required Courses

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5

Intermediate Physics

PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371 (Integrative course)	4

Advanced Physics

PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4

Capstone and Electives

Code	Title	Hours
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Capstone

Complete either one computer science capstone or the physics capstone:		4
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Computer Science Capstone

CS 4100	Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4410	Compilers	
CS 4150	Game Artificial Intelligence	
CS 4550	Web Development	

Physics Capstone

PHYS 5318	Principles of Experimental Physics	
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Computer Science Elective

The computer science elective is not required if the student has completed the computer science capstone (above). With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		4
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CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Physics Elective

Only one physics elective is required if the student has completed the physics capstone (above).

Complete two courses in the following range:	8
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PHYS 3000 to PHYS 5999

Integrative Courses

Code	Title	Hours
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Calculus

MATH 1341	Calculus 1 for Science and Engineering (a grade of C– or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C– or higher is required)	4
MATH 2321	Calculus 3 for Science and Engineering	4

Additional Mathematics Requirements

MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 4525	Applied Analysis	4

Supporting Course

Code	Title	Hours
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Complete one of the following:

ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	4
PHIL 1145	Technology and Human Values	4
SOCL 1280	The 21st-Century Workplace	4
SOCL 3485	Environment, Technology, and Society	4
SOCL 4528	Computers and Society	4

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
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Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	4

Required General Electives

Code	Title	Hours
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Complete six general electives.

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Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data

- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

136 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	MATH 1342	4	MATH 2321	4		
CS 2500 and CS 2501	5	PHYS 1165	4				
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	ENGW 1111	4				
PHYS 1162	1						
		20	18		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 2800 and CS 2801	5	CS 3000	4	Elective	4	Co-op	
MATH 2341	4	PHYS 3602	4	Elective	4		
PHYS 2371	3	Computing and social issues	4				
PHYS 2372	1	PHYS 2305	4				
PHYS 2303	4	CS 1210	1				
		17	17		8		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	PHYS 3600	4	Co-op	
		Elective	4	Elective	4		
		PHYS elective if CS capstone (CS elective if PHYS capstone)	4				
		CS or PHYS capstone	4				
		THTR 1170	1				
		0	17		8		0

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		CS 4500 and CS 4501	4	Elective	4
		MATH 4525	4	Elective	4

PHYS elective	4		
ENGW 3302	4		
0	16	8	

Total Hours: 137

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	MATH 1342	4				
CS 2500 and CS 2501	5	PHYS 1165	4				
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	ENGW 1111	4				
PHYS 1162	1						
		20	18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 3000	4	Vacation	0	Co-op	0
PHYS 2303	4	MATH 2321	4				
PHYS 2371	3	PHYS 2305	4				
PHYS 2372	1	MATH 2341	4				
CS 2800 and CS 2801	5	CS 1210	1				
		17	17		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	PHYS 3600	4	Co-op	0
		Elective	4	Elective	4		
		PHYS 3602	4				
		ENGW 3302	4				
		THTR 1170	1				
		0	17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4500 and CS 4501	4	Elective	4	Co-op	0
		MATH 4525	4	Elective	4		
		PHYS elective	4				
		Computing and social issues	4				
		0	16		8		0

Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	CS or PHYS capstone	4		

PHYS elective if CS capstone (CS elective if PHYS capstone)	4
Elective	4
Elective	4
0	16

Total Hours: 137

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	MATH 1342	4				
PHYS 1161	4	PHYS 1165	4				
PHYS 1162	1	PHYS 1166	1				
CS 1200	1	ENGW 1111	4				
MATH 1341	4						
	20		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
PHYS 2303	4						
PHYS 2371	3						
PHYS 2372	1						
CS 2800 and CS 2801	5						
CS 1210	1						
	18		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	Co-op	0	Co-op	0	PHYS 2305	4
CS 3000	4					PHYS 3600	4
MATH 2341	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
PHYS 3602	4						
ENGW 3302	4						
THTR 1170	1						
	17		0		0		8

Year 5

Fall	Hours	Spring	Hours
CS 4500 and CS 4501	4	CS or PHYS capstone	4

MATH 4525	4	PHYS elective if CS capstone (CS elective if PHYS capstone)	4
PHYS elective	4	Elective	4
Computing and social issues	4	Elective	4
	16		16

Total Hours: 137

Computer Science and Political Science, BS

The computer science and political science combined major offers both a strong computer science foundation and a deep understanding of global and societal needs. You will become an engaged citizen of the world, participating in interdisciplinary scholarship and translational research to address regional and global issues.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C- or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
Computer Science Required Courses		

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of upper-division CS, IS, and DS courses that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010
IS 2000 or higher, except IS 4900
DS 2000 or higher, except DS 4900

Political Science Courses

Code	Title	Hours
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Political Science Requirements

POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4

Political Theory

Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Capstone

POLS 4701	Political Science Senior Capstone	4
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Political Science Electives

Complete four courses in the following range:		16
POLS 2000 to POLS 5999		

Integrative Requirement

Code	Title	Hours
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Integrative Requirement

Complete one of the following:		4
POLS 2390	Science, Technology, and Public Policy	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3408	International Security	

Supporting Course

Code	Title	Hours
Complete one of the following:		4
SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	

PHIL 1145	Technology and Human Values
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete seven general electives.		28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science and Political Science Major Credit Requirement

100 semester hours required in the major

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Writing-Intensive in the Major
- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Year, Two Co-ops in Summer 2/Fall

Year 1			
Fall	Hours	Spring	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5
CS 2500 and CS 2501	5	IS 2000	4
CS 1200	1	ENGW 1111	4
CS 3200	4	Vacation	
CS 3500	4		

POLS 1150 and POLS 1151	4	POLS 1160 and POLS 1161	4			
POLS 1155 and POLS 1156	4					
		19	17	8	0	
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3000	4	CS 1210	1	ENGW 3302, 3308, 3311, or 3315	4	Co-op
POLS 2399	4	CS elective 1	4	Elective	4	
POLS theory elective	4	POLS 2400	4			
Elective	4	POLS elective 1	4			
		Elective	4			
		16	17	8	0	
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS elective 2	4	Elective	4	Co-op
		POLS elective 2	4	Elective	4	
		POLS elective 3	4			
		Computing and social issues requirement	4			
		THTR 1170	1			
		0	17	8	0	
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS elective 3	4			
		POLS 4701	4	Elective	4	
		POLS elective 4	4	Elective	4	
		POLS integrative requirement	4			
		0	16	8	0	

Total Hours: 134

Five Year, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	Vacation	
CS 2500 and CS 2501	5	IS 2000	4			
CS 1200	1	ENGW 1111	4			
POLS 1150 and POLS 1151	4	POLS 1160 and POLS 1161	4			

POLS 1155 and POLS 1156	4					
		19	17	0	0	
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3000	4	CS 1210	1	Vacation	Co-op	
CS 3500	4	CS 3200	4			
POLS 2399	4	POLS 2400	4			
POLS theory elective	4	POLS elective 1	4			
		Elective	4			
		16	17	0	0	
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS elective 1	4	ENGW 3302, 3308, 3311, or 3315	4	Co-op
		POLS elective 2	4	Elective	4	
		Computing and social issues requirement	4			
		Elective	4			
		THTR 1170	1			
		0	17	8	0	
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS elective 2	4	Elective	4	Co-op
		POLS elective 3	4	Elective	4	
		POLS integrative requirement	4			
		Elective	4			
		0	16	8	0	
Year 5						
Fall	Hours	Spring	Hours			
Co-op		CS elective 3	4			
		POLS 4701	4			
		POLS elective 4	4			
		Elective	4			
		0	16			

Total Hours: 134

Computer Science and Sociology, BS

The social aspects to computing continue to grow, primarily with respect to communication and the internet. The computer science and sociology combined major examines this significant impact on society and how people communicate and share culture. Students will have an opportunity to gain a solid programming foundation, as well as the practical and

theoretical skills needed to address the complex social and cultural issues in a period of far-reaching social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4
Computer Science Writing-Intensive Requirement		
Complete one of the following:		4
CS 4500	Software Development	
IS 3500	Information System Design and Development	
DS 4200	Information Presentation and Visualization (Take DS 4100 either as a prerequisite of or concurrently with DS 4200.)	
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1
Computer Science Elective Courses		
With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.		
Complete 12 credits of upper-division CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		12
CS 2500 or higher, except CS 5010		

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Sociology Courses

Code	Title	Hours
Sociology Required Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
Sociology Electives		
Complete one sociology elective in each of the following ranges:		12
Introductory elective: SOCL 1000 to SOCL 1999		
Intermediate elective: SOCL 2000 to SOCL 3999		
Advanced elective: SOCL 4000 to SOCL 4999		
Sociology Required Capstone		
SOCL 4600	Senior Seminar	4
Integrative Course Requirement		
Complete one of the following:		4
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
Computer Science Writing Requirement		
Complete one of the following:		4
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	
Advanced Writing in the Disciplines		
Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
Required General Electives		
Complete eight general electives.		32
Major GPA Requirements		
Minimum 2.000 GPA required in all CS and IS courses, and a 2.000 average GPA requirement across all sociology classes is required.		
NUPath Requirements Satisfied		
<ul style="list-style-type: none"> Engaging with the Natural and Designed World Conducting Formal and Quantitative Reasoning Analyzing and Using Data 		

- Writing-Intensive in the Major
- Writing in the First Year
- Advanced Writing in the Disciplines
- Interpreting Culture
- Understanding Societies and Institutions
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 2500 and CS 2501	5	IS 2000	4	CS 3500	4		
CS 1200	1	SOCL 2320	4				
ENGW 1111	4	ANTH 1101	4				
SOCL 1101	4						
		19		17		8	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
CS 1210	1					Elective	4
SOCL 2321	4						
ANTH 2305	4						
Elective	4						
		17		0		8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 1	4	Co-op		Co-op		Elective	4
SOCL 2300	4					Elective	4
Sociology introductory elective	4						
Elective	4						
THTR 1170	1						
		17		0		8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	SOCL 4600	4	Elective	4		
Sociology intermediate elective	4	CS writing-intensive requirement	4	Elective	4		
Elective	4	Sociology advanced elective	4				

Integrative requirement	4	CS elective 3	4		
		16		8	

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 2500 and CS 2501	5	IS 2000	4				
CS 1200	1	SOCL 2320	4				
ENGW 1111	4	ANTH 1101	4				
SOCL 1101	4						
		19		17		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op		Co-op		Vacation	
CS 3500	4						
CS 1210	1						
SOCL 2321	4						
ANTH 2305	4						
		17		0		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3200	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
Elective	4					Elective	4
SOCL 2300	4						
Sociology introductory elective	4						
THTR 1170	1						
		17		0		8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 1	4	Co-op		Co-op		Elective	4
Sociology intermediate elective	4					Elective	4
Elective	4						
Integrative requirement	4						
		16		0		8	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	SOCL 4600	4				
Sociology advanced elective	4	CS writing-intensive requirement	4				
Elective	4	CS elective 3	4				

Elective	4	Elective	4
	16		16
Total Hours: 134			

Cybersecurity and Business Administration, BS

The cybersecurity and business combined major delivers a technical and security-focused degree with a strong grounding in business. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while also focusing on the conceptual and practical computer science skills that will enable them to contribute to ensuring the reliability and security of cyberspace.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
Cybersecurity Required Courses		
CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
or IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
CS 4740	Network Security	4
Cybersecurity Electives		
If courses require prerequisites, those should be taken using general electives.		

Complete one course from the following: 3-4

CS 2800	Logic and Computation
CS 4240	Large-Scale Parallel Data Processing
CS 4400	Programming Languages
CS 4500 and CS 4501	Software Development and Recitation for CS 4500
CS 4710	Mobile and Wireless Systems
CS 5770	Software Vulnerabilities and Security
CS 6710	Wireless Network
DS 4300	Large-Scale Information Storage and Retrieval
DS 4400	Machine Learning and Data Mining 1
IA 5200	Security Risk Management and Assessment
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210
IS 4300	Human Computer Interaction
EECE 2160	Embedded Design: Enabling Robotics
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322
EECE 3324	Computer Architecture and Organization
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534
MATH 3527	Number Theory 1
MATH 4575	Introduction to Cryptography
COMM 2551	Free Speech in Cyberspace
CRIM 2200	Criminology
CRIM 3030	Global Criminology
CRIM 3400	Corporate Security: Securing the Private Sector
CRIM 4040	Crime Prevention
LPSC 1101	Introduction to Law
LPSC 2301	Introduction to Law, Policy, and Society
LPSC 3303	Topics in Law and Public Policy
PHIL 1145	Technology and Human Values
POLS 2390	Science, Technology, and Public Policy
POLS 3307	Public Policy and Administration
POLS 3324	Law and Society
POLS 3406	International Law
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3423	Terrorism and Counterterrorism

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Organizational Behavior		

ORGB 3201	Organizational Behavior	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Statistics		
MGSC 2301	Business Statistics	4
Strategy		
STRT 4501	Strategy in Action	4
or STRT 4516	External Case Competition Challenge	

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below. (p. 241)

- Accounting (p. 241)
- Entrepreneurship and Innovation (p. 241)
- Finance (p. 241)
- Management (p. 242)
- Marketing (p. 242)
- Supply Chain Management (p. 242)

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Integrative Requirement

Code	Title	Hours
MISM 2301	Management Information Systems	4

Supporting Courses

Code	Title	Hours
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Mathematics Courses

Complete one of the following: 4

MATH 1341	Calculus 1 for Science and Engineering	
MATH 1231	Calculus for Business and Economics	

Economics

Complete one of the following: 4

ECON 1115	Principles of Macroeconomics	
ECON 1116	Principles of Microeconomics	

Writing Requirements

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:

ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete four general electives.		16

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Business GPA Requirement

Minimum 2.000 GPA required in all business courses.

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
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Required Courses

ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4

Electives

Complete two of the following: 8

ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course	
Complete one of the following:	4
ENTR 4501	Business Planning for Technology Ventures
ENTR 4503	Business Planning for Small and Medium Enterprises
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise

Electives	
Note: Only one non-ENTR course may be used as an elective.	
Complete two of the following:	8
ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	

FINA 4219	Portfolio Management
FINA 4220	Behavioral Finance
FINA 4310	Working Capital Management
FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	CS 2550	4	Elective 1	4		
CS 2500 and CS 2501	5	MATH 1341 or 1231	4				
ENGW 1111	4	ACCT 1201	4				
ECON 1115 or 1116	4						
19		17		8		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 3700	4	MKTG 2201	4	Co-op	
CS 3650	4	CS 3740	4	Elective 3	4		
ACCT 2301	4	Business concentration 1	4				
MGSC 2301	4	Elective 2	4				
		CS 1210	1				
16		17		8		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4170 or IA 5240	4	FINA 2201	4	Co-op	
		Business concentration 2	4	ORGB 3201	4		
		Business concentration 3	4				
		CS 4740	4				
		THTR 1170	1				
0		17		8		0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGW 3302	4	STRT 4501	4		
		MISM 2301	4	Elective 4	4		
		Business concentration 4	4				
		Cybersecurity elective	4				
0		16		8		0	

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	CS 2550	4				
CS 2500 and CS 2501	5	MATH 1341 or 1231	4				
ENGW 1111	4	ACCT 1201	4				
ECON 1115 or 1116	4						
19		17		0		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Vacation		Co-op	
CS 3650	4	CS 3700	4				
ACCT 2301	4	CS 3000	4				
MGSC 2301	4	Business concentration 1	4				

	Elective 1	4					
	16	17	0	0			
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	CS 3740	4	FINA 2201	4	Co-op		
	MKTG 2201	4	ORGB 3201	4			
	THTR 1170	1					
	Business concentration 2	4					
	Elective 2	4					
	0	17	8	0			
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	CS 4170 or IA 5240	4	ENGW 3302	4	Co-op		
	CS 4740	4	Elective 4	4			
	Business concentration 3	4					
	Elective 3						
	0	12	8	0			
Year 5							
Fall	Hours	Spring	Hours				
Co-op	MISM 2301	4					
	STRT 4501	4					
	Business concentration 4	4					
	Cybersecurity elective	4					
	0	16					

Total Hours: 130

Cybersecurity and Criminal Justice, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
or CRIM 1000	Criminal Justice at Northeastern	

CS 1210	Professional Development for CCIS Co-op	1
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Discrete Structures

A grade of C– or higher is required:

CS 1800	Discrete Structures and Seminar for CS 1800	5
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Computer Science Fundamentals Courses

A grade of C– or higher is required in each course:

CS 2500	Fundamentals of Computer Science 1 and Lab for CS 2500	5
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CS 2510	Fundamentals of Computer Science 2 and Lab for CS 2510	5
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Computer Science Required Courses

CS 3000	Algorithms and Data	4
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CS 3500	Object-Oriented Design	4
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CS 3650	Computer Systems	4
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CS 3700	Networks and Distributed Systems	4
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Cybersecurity Required Courses

CS 2550	Foundations of Cybersecurity	4
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CS 3740	Systems Security	4
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CS 4740	Network Security	4
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Cybersecurity Elective

Complete one of the following: 4

CS 2800	Logic and Computation	
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CS 4710	Mobile and Wireless Systems	
or CS 6710	Wireless Network	

CS 5770	Software Vulnerabilities and Security	
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CS 4770	Cryptography	
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CS 4400	Programming Languages	
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CS 4500	Software Development	
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CS 4240	Large-Scale Parallel Data Processing	
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DS 4300	Large-Scale Information Storage and Retrieval	
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DS 4400	Machine Learning and Data Mining 1	
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IA 5200	Security Risk Management and Assessment	
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IA 5210	Information System Forensics and Lab for IA 5210	
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IS 4300	Human Computer Interaction	
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EECE 2160	Embedded Design: Enabling Robotics	
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EECE 2322	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
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EECE 3324	Computer Architecture and Organization	
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EECE 4534	Microprocessor-Based Design and Lab for EECE 4534	
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MATH 3527	Number Theory 1	
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MATH 4575	Introduction to Cryptography	
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COMM 2551	Free Speech in Cyberspace	
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LPSC 1101	Introduction to Law	
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LPSC 2301	Introduction to Law, Policy, and Society	
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LPSC 3303	Topics in Law and Public Policy	
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PHIL 1145	Technology and Human Values	
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POLS 2390	Science, Technology, and Public Policy	
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POLS 3307	Public Policy and Administration	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	

Computer Science Senior Seminar

THTR 1170	The Eloquent Presenter	1
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Supporting Courses

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

Complete one of the following: 4

ENGW 1111	First-Year Writing	
ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following: 4

ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Criminal Justice Requirements

Code	Title	Hours
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Core Requirements

CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4

Thematic Elective

Complete one of the following: 4

CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	

Survey Elective

Complete one of the following: 4

CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	

System-Wide Elective

Complete one of the following: 4

CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
Criminal Justice Elective		
Complete one CRIM course.		4
Criminal Justice Capstone		
Complete one of the following:		4
CRIM 4949	Senior Capstone Seminar	
CS 4930	Cybersecurity Capstone	
CS 4940	Research Projects on National Security	

Criminal Justice Co-op Integration

Code	Title	Hours
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Co-op students should complete at least one of the following courses. CRIM 3000 is required for the first co-op. CRIM 4000 is required if a second co-op is taken:

CRIM 3000	Co-op Integration Seminar 2	1
CRIM 4000	Co-op Integration Seminar 3	1

Integrative Requirement

Code	Title	Hours
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Cybersecurity Integrative Course

CS 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
or IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

Criminal Justice Integrative Course

Complete one of the following: 4

CRIM 4040	Crime Prevention	
CRIM 4630	Political Crime and Terrorism	
CRIM 3050	Organized Crime	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
CRIM 5900	Topics in Criminal Justice and Criminology	

Required General Electives

Code	Title	Hours
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Complete six general electives. 24

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Program Requirement

133 total semester hours required.

Cybersecurity and Economics, BS

The cybersecurity and economics combined degree applies a multidisciplinary approach integrating fundamental economics courses with a strong programming foundation. Students will study both the behavior of individuals and the collective behavior of industries and governments, utilizing computing skills to ensure the reliability and security of cyberspace.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200 or ECON 1000	Leadership Skill Development Economics at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1
Discrete Structures		
A grade of C– or higher is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
Computer Science Fundamentals Courses		
A grade of C– or higher is required in each course:		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
Cybersecurity Required Courses		
CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4740	Network Security	4
CS 4170 or IA 5240	The Law, Ethics, and Policy of Data and Digital Technologies Cyberlaw: Privacy, Ethics, and Digital Rights	4
Cybersecurity Elective		
Complete one of the following: 4		
CS 2800	Logic and Computation	
CS 4710 or CS 6710	Mobile and Wireless Systems Wireless Network	
CS 5770	Software Vulnerabilities and Security	
CS 4770	Cryptography	
CS 4400	Programming Languages	
CS 4500	Software Development	
CS 4240	Large-Scale Parallel Data Processing	
DS 4300	Large-Scale Information Storage and Retrieval	
DS 4400	Machine Learning and Data Mining 1	
IA 5200	Security Risk Management and Assessment	

IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210	
IS 4300	Human Computer Interaction	
EECE 2160	Embedded Design: Enabling Robotics	
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 3324	Computer Architecture and Organization	
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534	
MATH 3527	Number Theory 1	
MATH 4575	Introduction to Cryptography	
COMM 2551	Free Speech in Cyberspace	
CRIM 2200	Criminology	
CRIM 3030	Global Criminology	
CRIM 4040	Crime Prevention	
CRIM 3400	Corporate Security: Securing the Private Sector	
LPSC 1101	Introduction to Law	
LPSC 2301	Introduction to Law, Policy, and Society	
LPSC 3303	Topics in Law and Public Policy	
PHIL 1145	Technology and Human Values	
POLS 2390	Science, Technology, and Public Policy	
POLS 3307	Public Policy and Administration	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
Computer Science Senior Seminar		
THTR 1170	The Eloquent Presenter	1

Supporting Course

Code	Title	Hours
MATH 1341 or MATH 1231	Calculus 1 for Science and Engineering Calculus for Business and Economics	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
Complete one of the following: 4		
ENGW 1111	First-Year Writing	
ENGW 1102	First-Year Writing for Multilingual Writers	
Advanced Writing in the Disciplines		
Complete one of the following: 4		
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Economics Requirements

Code	Title	Hours
Required Courses		
A cumulative 2.0 GPA is required.		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
Electives		
Complete four ECON electives with at least two numbered at ECON 3000 or above.		16
ECON 1001 to ECON 2999		
ECON 3000 to ECON 5999		

Integrative Requirement

Code	Title	Hours
Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
CS 4930	Cybersecurity Capstone	
CS 4940	Research Projects on National Security	

Integrative Requirement

ECON 2560	Applied Econometrics	4
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Required General Electives

Code	Title	Hours
Complete six general electives.		24

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Program Requirement

133 total semester hours required.

Data Science and Biochemistry, BS

The Data Science and Biochemistry Major combines computer science, biochemistry, biology, information science, mathematics, and statistics into an integrated curriculum. The program engages students in rigorous course work designed to prepare students to interpret the ever-expanding knowledge base.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Data Science Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Discrete Structures

A grade of C– or higher is required:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
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Computer Science Foundations

A grade of C– or higher is required:

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Data Science Foundations

DS 4100	Data Collection, Integration, and Analysis	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4

Data Science Upper-Division Elective

Complete one of the following, not taken to fulfill previous requirements:

CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Supporting Courses for Data Science

THTR 1170	The Eloquent Presenter	1
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Statistics Foundations

Complete one of the following:		4
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
MATH 3081	Probability and Statistics	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing or First-Year Writing for Multilingual Writers	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3315	Advanced Writing in the Technical Professions or Interdisciplinary Advanced Writing in the Disciplines	4

Biochemistry Requirements

Code	Title	Hours
Biology Foundations		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
BIOL 2299	Inquiries in Biological Sciences	4
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 2309	Biology Project Lab	4
Chemistry Foundations		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Mathematics Foundations

MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4

Biochemistry Foundations

BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
CHEM 2331 and CHEM 2332 or CHEM 4620	Bioanalytical Chemistry and Lab for CHEM 2331 Introduction to Protein Chemistry	4-5

Integrative Requirement

Code	Title	Hours
Integrative Courses		
BINF 6308	Bioinformatics Computational Methods 1	4
BINF 6309	Bioinformatics Computational Methods 2	4
Complete one of the following:		4
BIOL 4701	Biology Capstone	
CHEM 4750	Senior Research	
DS 4900	Data Science Senior Project	

Required General Electives

Code	Title	Hours
Complete three general electives.		12

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and DS courses

Program Requirement

136 total semester hours required

Data Science and Health Science, BS

The health science and computer science combined major offers a solid academic and experiential foundation integrating studies in health administration, computer science, mathematics, and statistics. This program reflects the impact of data in modern healthcare and prepares

students for success in careers in health administration, community-based health promotion, public health, and big data analysis.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Data Science Requirements

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Discrete Structures

A grade of C- or higher is required:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
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Computer Science Foundation

A minimum grade of C- must be earned in CS 2500 and CS 2510.

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 3500	Object-Oriented Design	4
CS 3200	Database Design	4

Information Science Requirement

IS 4300	Human Computer Interaction	4
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Data Science Foundations

DS 4100	Data Collection, Integration, and Analysis	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4

Supporting Courses for Data Science

Code	Title	Hours
MATH 1341 or MATH 1241	Calculus 1 for Science and Engineering Calculus 1	4

Data Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4

Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Health Science Requirements

Code	Title	Hours
Public Health Core		
PHTH 1260	The American Healthcare System	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 4540	Health Education and Program Planning	4

Supporting Courses for Health Science

Code	Title	Hours
Research Methods		
Complete one of the following:		4
HLTH 5450	Healthcare Research	
IS 4800	Empirical Research Methods	
Statistics		
Complete one of the following:		4
PHTH 2210	Foundations of Biostatistics	
PSYC 2320	Statistics in Psychological Research	
ECON 2350	Statistics	
ENVR 2500	Biostatistics	
MATH 3081	Probability and Statistics	
Philosophy		
Complete one of the following:		4
PHIL 1145	Technology and Human Values	
PHIL 1165	Moral and Social Problems in Healthcare	

Life Sciences Core

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
PSYC 1101	Foundations of Psychology	4

Integrative Requirement

Code	Title	Hours
Upper-Division Elective		
Complete one from the following:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		
PHTH 4000 or higher		

HSCI 4000 or higher

Integrative Course		
DS 4900	Data Science Senior Project	4

Required General Electives

Code	Title	Hours
Complete three general electives.		12

Data Science GPA Requirement

Minimum 2.000 GPA required in all computer, data, and information science courses.

Program Requirement

136 semester hours required

Information Science and Business Administration, BS

The information science and business combined major provides a technical degree with a strong grounding in business. Information science combines concepts and skills from computer science, behavioral and social science, and system design into an integrated, people-centered curriculum. Students will complete most of the requirements of a business major, including macroeconomics and microeconomics, while studying how information is acquired, organized, communicated, and used by both people and computers.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4

CS 3500	Object-Oriented Design	4
Information Science Required Courses		
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods	4
Presentation Requirement		
THTR 1170	The Eloquent Presenter	1

Business Courses

Code	Title	Hours
Required Business Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
ORGB 3201	Organizational Behavior	4
MKTG 2201	Introduction to Marketing	4
MGSC 2301	Business Statistics	4
Choose one of the following: ¹		4
STRT 4501	Strategy in Action	
STRT 4516	External Case Competition Challenge	

¹ Strategy in Action (STRT 4501), and External Case Competition Challenge (STRT 4516) satisfy the capstone requirement.

Business Concentration

Complete a four-course business concentration from the following list. Requirements for the concentrations are listed below (p. 250).

- Accounting (p. 250)
- Entrepreneurship and Innovation (p. 250)
- Finance (p. 251)
- Management (p. 251)
- Marketing (p. 251)
- Supply Chain Management (p. 252)

Integrative Requirement

Code	Title	Hours
MISM 2301	Management Information Systems	4
MISM 3404	Data Communications	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
or MATH 1231	Calculus for Business and Economics	
Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

PHIL 1145	Technology and Human Values
SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
	Complete four general electives.	16

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Information Science GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	

ACCT 4414 Income Tax Determination and Planning

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following: 4

ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following: 8

ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	

ENTR 4225 Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
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Required Course

FINA 3301	Corporate Finance	4
or FINA 3303	Investments	

Electives

Complete three of the following: 12

ENTR 3520	Impact Investing and Social Finance	
or FINA 2720	Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
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Required Course

MGMT 4501	Skills for Managerial Success	4
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Electives

Note: Only one non-MGMT course may be used as an elective.

Complete three of the following: 12

MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	

MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches
MGMT 3350	Managing a Diverse Workforce
MGMT 3360	Law and the Legal Process
MGMT 3420	Managing Human Capital
MGMT 3510	Managing Global Teams Virtually and Locally
MGMT 3530	Project Management
MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	

SCHM 4401	Advanced Problems in Supply Chain Management
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Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	ACCT 1201	4	Vacation
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341 or 1231	4	
CS 2500 and CS 2501	5	ECON 1116	4			
ENGW 1111	4	Elective	4			
ECON 1115	4					
		19		17		8
						0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
IS 2000	4	IS 3500	4	MKTG 2201	4	Co-op
CS 3500	4	Business concentration 1	4	FINA 2201	4	
ACCT 2301	4	CS 3000	4			
MGSC 2301	4	Elective	4			
		CS 1210	1			
		16		17		8
						0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		Business concentration 2	4	ORGB 3201	4	Co-op
		MISM 2301	4	Elective	4	
		Business concentration 3	4			
		Computing and social issues	4			
		THTR 1170	1			
		0		17		8
						0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		IS 4800	4	STRT 4501	4	
		ENGW 3302	4	Elective	4	
		Business concentration 4	4			
		MISM 3404	4			
		0		16		8

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 3200	4				
CS 1200	1	ECON 1116	4				
ECON 1115	4	Elective	4				
ENGW 1111	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Vacation	0	Co-op	0
CS 3500	4	ACCT 2301	4				
ACCT 1201	4	Elective	4				
MGSC 2301	4	CS 3000	4				
		CS 1210	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MISM 3404	4	ORGB 3201	4	Co-op	0
		FINA 2201	4	MKTG 2201	4		
		MATH 1341	4				
		ENGW 3302	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Elective	4	Co-op	0
		MISM 2301	4	Elective	4		
		Business concentration 1	4				
		Business concentration 2	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	STRT 4501	4
		Business concentration 3	4
		Computing and social issues	4
		Business concentration 4	4
	0		16

Total Hours: 134

Information Science and Cognitive Psychology, BS

The information science and cognitive psychology combined major provides a foundation in general psychology, psychology of language, cognition, and statistics. These are supplemented by an experimental laboratory course, seminar course, and psychology electives. Information science combines concepts and skills from computer science, behavioral and social science, and system design to create an integrated, people-centered curriculum. Students who choose this program often have a general interest in human psychology or specific interests in artificial intelligence or human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer and Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4100	Artificial Intelligence (integrative course)	4

Information Science Required Courses

IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4300	Human Computer Interaction (integrative course)	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project (integrative course)	5

Psychology Courses

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
PSYC 3466	Cognition	4
Advanced Psychology		
PSYC 3452	Sensation and Perception	4
or PSYC 3458	Biological Psychology	
Laboratory in Psychology		
Complete one of the following:		4
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
Seminar in Psychology		
Complete one of the following:		4
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
Psychology Electives		
Note: Courses satisfying the categories above cannot be reused.		
Complete two of the following:		8
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 4512	Neuropsychology	
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4628	Laboratory in Developmental Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
With prior approval, directed study research and Honors Project courses can also be counted:		
PSYC 4970	Junior/Senior Honors Project 1	
PSYC 4971	Junior/Senior Honors Project 2	
PSYC 4991	Directed Study Research	

Supporting Courses

Code	Title	Hours
Calculus		
A grade of C– or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

134 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	MATH 1341	4	Vacation	0
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4		
CS 2500 and CS 2501	5	Elective	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4						
		19		17		8	
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Elective	4	Co-op	0
CS 3500	4	CS 3000	4	Elective	4		
PSYC 2320	4	IS 4300	4				
PSYC 3464	4	PSYC 3452 or 3458	4				
		CS 1210	1				
		16		17		8	
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Elective	4	Co-op	0
		Computing and social issues	4	Elective	4		
		PSYC elective	4				
		PSYC seminar	4				
		0		16		8	
						0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4100	4	ENGW 3302	4	Co-op	0
		IS 4900	5	Elective	4		
		PSYC lab elective	4				
		PSYC elective	4				
		0		17		8	
						0	

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	PSYC 3466	4				
CS 2500 and CS 2511	5	Elective	4				
PSYC 1101	4	Elective	4				

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 4300	4	Vacation		Vacation	0
CS 3500	4	PSYC 2320	4			Co-op	
MATH 1341	4	CS 3000	4				
PSYC 3464	4	PSYC 3452 or 3458	4				
		CS 1210	1				
		16		17		0	
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 3500	4	Elective	4	Co-op	
		ENGW 3302	4	Elective	4		
		PSYC elective	4				
		Elective	4				
		0		16		8	
						0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4100	4	Elective	4	Co-op	
		IS 4800	4	Elective	4		
		PSYC elective	4				
		PSYC lab elective	4				
		0		16		8	
						0	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4900	5				
		PSYC seminar	4				
		Computing and social issues	4				
		Elective	4				
		0		17			

Total Hours: 134

Information Science and Environmental Science, BS

The information science and environmental science combined major provides a foundational study of geological processes before focusing on environmental planning, environmental ethics, and sustainability. Since it examines the relationship between human decisions and actions to the environment, the program aligns with the orientation of information science, which utilizes an integrated, people-centered curriculum combining concepts and skills from computer science, behavioral and social science, and system design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Fundamental Courses
A grade of C– or higher is required in computer science fundamental courses:

Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
Information Science Required Courses		
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods (Integrative course)	4

Computer Science Elective Courses		
With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.		
Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

Environmental Science Courses		
ENVR 1101	Environmental Science	4
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 5210 or ENVR 5250	Environmental Planning and Geology and Land-Use Planning	4
ENVR 4900 or ENVR 4997	Earth and Environmental Science Capstone and Senior Thesis	1

Environmental Science Electives		
Complete three of the following:		
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	12
ENVR 3418	Geophysics	
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
ENVR 4504	Environmental Pollution	
ENVR 5201	Geologic Field Seminar	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	

Environmental Science Courses

Code	Title	Hours
Required Environmental Science Courses		
ENVR 1101	Environmental Science	4
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 5210 or ENVR 5250	Environmental Planning and Geology and Land-Use Planning	4
ENVR 4900 or ENVR 4997	Earth and Environmental Science Capstone and Senior Thesis	1

Sustainability Focus Courses		
PHIL 1180	Environmental Ethics	4
Complete two of the following:		8
ECON 3423	Environmental Economics	
ENVR 4515	Sustainable Development	
ENVR 5202	Environmental Science Field Seminar Abroad	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
SOCL 1246	Environment and Society	

Environmental Science Electives		
Complete three of the following:		12
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	
ENVR 3418	Geophysics	
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
ENVR 4504	Environmental Pollution	
ENVR 5201	Geologic Field Seminar	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	

Integrative Course

Code	Title	Hours
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5

Supporting Courses

Code	Title	Hours
Mathematics and Statistics		
ECON 2350	Statistics	4
MATH 1251	Calculus and Differential Equations for Biology 1	4
or MATH 1341	Calculus 1 for Science and Engineering	

Chemistry		
Complete one of the following:		5
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
CHEM 1151 and CHEM 1152 and CHEM 1153	General Chemistry for Engineers and Lab for CHEM 1151 and Recitation for CHEM 1151	

Economics		
ECON 1116	Principles of Microeconomics	4

Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	

SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Exploring Creative Expression and Innovation
- Understanding Societies and Institutions
- Analyzing and Using Data
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

136 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	IS 2000	4	Vacation	0
CS 1800 and CS 1802	5	ENVR 1200 (ENVR 1201 (Lab if Offered))	4	Elective	4		
CS 2500 and CS 2501	5	CS 3200	4				
ENVR 1101	4	ECON 1116	4				
ENGW 1111	4						
		19	17		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	IS 3500	4	Elective	4	Co-op	0

PHIL 1180	4	CS elective	4	CS 3000	4		
ENVR elective	4	ENVR 3300 and ENVR 3301	5				
CHEM 1211 and CHEM 1212 and CHEM 1213	5	ECON 2350	4				
		CS 1210	1				
		17	18		8		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IS 4800	4	Elective	4	Co-op	0
		ENVR elective	4	MATH 1251 or 1341	4		
		ENVR sustainability	4				
		ENVR 5210 or 5250	4				
		0	16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENVR 4900 (ENVR 4997 (if short of credit hours))	1	Elective	4		
		Computing and social issues	4	ENGW 3302	4		
		ENVR elective	4				
		Elective	4				
		ENVR sustainability	4				
		0	17		8		0

Total Hours: 136

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	ENVR 1200 (ENVR 1201 (Lab if offered))	4				
ENGW 1111	4	ECON 1116	4				
ENVR 1101	4						
		19	17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	ENVR 3300 and ENVR 3301	5	Elective	4	Co-op	0

CS 3500	4	CS 3000	4	Elective	4
CHEM 1211 and CHEM 1212 and CHEM 1213	5	ECON 2350	4		
ENVR elective	4	PHIL 1180	4		
		CS 1210	1		
	17		18		8
					0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 3500	4	Elective	4	Co-op	0
		CS elective	4	ENGW 3302	4		
		MATH 1251 or 1341	4				
		ENVR elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Vacation	0	Co-op	0
		ENVR elective	4				
		ENVR sustainability	4				
		Elective	4				
	0		16		0		0

Year 5

Fall	Hours	Spring	Hours
Co-op		ENVR 4900 (or ENVR 4997 (if short of credit hours))	1
		ENVR sustainability	4
		ENVR 5210 or 5250	4
		Elective	4
		Computing and social issues	4
	0		17

Total Hours: 136

Information Science and Journalism, BS

The information science and journalism combined major is similar to the computer science and journalism degree, with a greater focus on the journalism profession's information science needs. Information science combines concepts and skills from computer science, behavioral and social science, and system design into an integrated, people-centered curriculum. Both degrees provide a strong foundation in the principles, practices, and responsibilities of journalism as well as the systems and technologies that support digital media.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Information Science Required Courses

IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project	5

Information Science Elective (Integrative)

Complete one of the following:		4
IS 4200	Information Retrieval	
IS 4300	Human Computer Interaction	

Journalism Major Requirements

Students transferring from outside institutions must complete a minimum of five 4-credit journalism courses at Northeastern, and these must include:

Code	Title	Hours
JRNL 2201	Journalism 2: Intermediate Reporting	
JRNL 2301	Visual Storytelling in Journalism	
JRNL 4650	Ethics and Issues in Journalism	

Journalism Courses

A grade of C or higher is required:

JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4
Required Journalism		
JRNL 1150	Understanding Today's News	4
JRNL 2350	The History of Journalism: How the News Became the News	4
JRNL 3550	The First Amendment and the Media	4
JRNL 4650	Ethics and Issues in Journalism	4
Journalism Electives		
Complete two JRNL courses.		8
Journalism-Related Requirement		
HIST 1130	Introduction to the History of the United States	4

Supporting Courses

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Calculus		
MATH 1341	Calculus 1 for Science and Engineering	4
Psychology		
PSYC 1101	Foundations of Psychology	4
Computing and Social Issues		
Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
JRNL 2301	Visual Storytelling in Journalism	4

Required General Electives

Code	Title	Hours
Complete five general electives.		20

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions

- Interpreting Culture
 - Engaging Difference and Diversity
 - Employing Ethical Reasoning
 - Writing in the First Year
 - Advanced Writing in the Disciplines
 - Writing-Intensive in the Major
 - Demonstrating Thought and Action in a Capstone
- Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and JRNL courses

Program Requirement

134 total semester hours required

Plan of Study

Sample Pattern, Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5				
JRNL 1150	4	HIST 1130	4				
ENGW 1111	4						
		19		18		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Vacation	0	Co-op	0
IS 2000 (*)	4	IS 3500 (*)	4				
JRNL 2201	4	Elective	4				
PSYC 1101	4	JRNL 2301	4				
		CS 3000	4				
		16		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	JRNL 3610	4	Elective	4	Co-op	0
		JRNL 2350	4	Elective	4		
		MATH 1341	4				
		ECON 2350	4				
		0		16		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	JRNL 3550	4	Elective	4	Co-op	0
		IS 4800 (*)	4	Elective	4		
		Journalism elective	4				
		Information science elective	4				
		0		16		8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	IS 4900 (*)	5
		JRNL 4650	4
		Journalism elective	4
		Computing and social issues	4
	0		17

Total Hours: 135

*Indicates course must be taken in the term listed.

Sample Pattern, Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4	MATH 1341	4		
CS 2500 and CS 2501	5	JRNL 1101 and JRNL 1102	5				
JRNL 1150	4	ECON 2350	4				
ENGW 1111	4						
	19		18		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000 (*)	4	CS 1210	1	HIST 1130	4	Co-op	0
Elective	4	IS 3500 (*)	4	Elective	4		
JRNL 2201	4	CS 3000	4				
PSYC 1101	4	JRNL 2350	4				
		JRNL 2301	4				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Journalism elective	4	Co-op	0
		Information science elective	4	Elective	4		
		JRNL 3610	4				
		Journalism elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	IS 4900	5	Elective	4
		JRNL 4650	4	Elective	4
		JRNL 3550	4		

Computing and social issues	4
0	17 8

Total Hours: 135

*Indicates course must be taken in the term listed.

Accelerated Bachelor/Graduate Degree Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See additional information on PlusOne Bachelor's/Master's programs (<http://www.northeastern.edu/plusone>).

Programs

- Computer Science, BSCS/Computer Science, MSCS
- Computer Science and Mathematics, BS/Mathematics, MS
- Cybersecurity, BS/Information Assurance and Cybersecurity, MSIA

Website (<http://www.coe.neu.edu>)

Nadine Aubry, PhD, Dean

Thomas C. Sheahan, ScD, Senior Associate Dean for Academic Affairs

Richard Harris, MS, Assistant Dean for Academic Scholarship, Mentoring, and Outreach; Director of Multicultural Engineering

Candace A. Martel, MEd, Assistant Dean; Director of Undergraduate Academic Advising

Rachelle Reisberg, MS, Assistant Dean for Engineering Enrollment and Retention; Director of Women in Engineering

Undergraduate Academic Advising Office

220 Snell Engineering Center

617.373.2154

COEAdvising@northeastern.edu

The mission of the College of Engineering is to provide a teaching, learning, and research environment that results in the highest-quality education for our students. Consistent with this goal, while providing a practice-oriented, experiential, and interdisciplinary program, the College of Engineering seeks to prepare students to contribute to the accumulation and application of technical knowledge. The college further seeks to help students master the fundamental mathematical and scientific principles underlying a particular branch of engineering; develop and demonstrate competence in analysis and design appropriate to an engineering specialization; reason clearly and communicate effectively; and recognize the need to continue professional development.

Through laboratory exercises, senior design projects, professional association activities, cooperative work assignments, and other experiential opportunities, students put theory into practice and clarify their professional goals.

The college offers a Bachelor of Science degree with specializations in bioengineering, chemical engineering, civil engineering, computer engineering, electrical engineering, environmental engineering, industrial engineering, and mechanical engineering. Five-year and four-year options are available to complete the Bachelor of Science degree program. The five-year option includes eighteen months of cooperative education work experience, and the four-year option includes twelve months of cooperative education experience. Customized four-year programs without co-op experience are also available.

The college encourages students to study the arts, sciences, business, and other areas outside engineering to allow for an increased awareness of the social, economic, political, aesthetic, and philosophical influences that shape the world in which graduates will practice their professions. Students may complete a minor in different areas such as business, computer science, biomedical engineering, math, or music. In many cases, the minor can be completed without course overloads.

The college also offers an array of international educational experiences, including a number of study-abroad options, international cooperative educational experiences, and Dialogue of Civilizations classes (which offer a four- to six-week opportunity to study engineering or a related field in the context of an international experience).

In addition to a full array of university services, specialized advising and other support services (including tutoring) are provided. Students in the University Honors Program may participate in honors sections

of a number of courses. Active student chapters of many national professional engineering organizations and honor societies are supported by the college as an enriching addition to academic studies and co-op experience.

The Bachelor of Science programs in chemical engineering, civil engineering, computer engineering, electrical engineering, industrial engineering, and mechanical engineering are accredited by the Engineering Accreditation Commission of ABET (<http://www.abet.org>).

Bachelor of Science/Master of Science Degree Programs

The Departments of Bioengineering, Chemical Engineering, Civil and Environmental Engineering, Electrical and Computer Engineering, and Mechanical and Industrial Engineering offer programs leading to both the bachelor's and master's degrees in five years. All students begin with the common first-year engineering program. Upon successful completion of required course work (four or five semesters in the undergraduate curriculum depending upon departmental requirements), students may petition to enter a BS/MS program. Degree candidates must maintain a 3.200 cumulative grade-point average (GPA), carry extra courses, and reduce the number of cooperative education semesters to complete the course requirements.

Academic Standards

ACADEMIC PROGRESSION STANDARDS

In addition to meeting university progression standards, it is expected that full-time engineering students enroll in four courses with appropriate labs and recitations and successfully complete at least 12 semester hours each academic semester with an acceptable GPA as noted below. Any exceptions to the course load requirement must be approved in writing by the student's academic advisor prior to the start of each semester. Only general electives taken outside the College of Engineering may be taken on a pass/fail grading basis.

GPA REQUIREMENTS FOR GRADUATION

A minimum cumulative GPA requirement of 2.000 in major (department) courses and a minimum cumulative GPA requirement of 2.000 overall are required for graduation.

CRITERIA FOR ACADEMIC PROBATION

Full-time students in the College of Engineering will be placed on academic probation effective for the following academic semester for any of the reasons noted below:

First-year Students:

- Not maintaining a semester GPA of at least a 1.800 at the end of each full-term semester (fall, spring) of the first-year curriculum
- Not earning at least 12 semester hours at the end of each semester of the first-year curriculum
- Not earning at least 24 semester hours at the end of the two full-term semesters (fall, spring) of the first-year curriculum

Upper-class and Transfer Students:

- Not earning at least 12 semester hours in the academic full-term semester (fall, spring) just completed
- Not maintaining an overall cumulative GPA of at least 2.000 at the end of each full-term academic semester (fall, spring)
- Not maintaining a GPA of at least a 2.000 in the major at the end of the fourth academic full-term semester of the curriculum and at the end of each full-term academic semester (fall, spring) thereafter

- Accumulating three outstanding course deficiencies (grades of F, I, W, NE, U, or missing grades)
- Earning a full-term semester (fall, spring) GPA of 1.800 or lower
- Not following a program of study approved by the student's academic advisor

A notation of the academic probation action will appear on the internal record but not on the permanent transcript.

CRITERIA FOR ACADEMIC DISMISSAL

Students who have below a 1.000 GPA in any academic term following their first semester or cumulatively may be dismissed, regardless of their prior academic status, at the discretion of the college.

Full-time students on academic probation in the College of Engineering are eligible for academic dismissal from the university for any of the reasons noted below:

- Earning less than a 1.800 GPA in a current term (fall, spring, summer, summer 1, or summer 2)
- Completing fewer than 12 semester hours in a full-term (fall, spring) academic semester
- Not following a program of study approved by the student's academic advisor
- Remaining on academic probation after two full-term (fall, spring) academic semesters

Notation of this academic dismissal action will appear on the permanent transcript.

PASS/FAIL COURSE WORK

Students may elect to take courses on a pass/fail basis in accordance with university policy. A maximum of two courses may be taken pass/fail toward fulfillment of degree requirements in the College of Engineering.

GRADUATION REQUIREMENTS

The college reserves the right to amend programs, courses, and degree requirements to fulfill its educational responsibility to respond to relevant changes in the field.

Students must complete all of the requirements in the degree program in which they are candidates. Degree requirements are based upon the year of graduation, determined by the date of entry or reentry into the College of Engineering. Degree requirements and the year of graduation for a degree candidate who fails to make normal academic progress will be subject to review and possible change.

PROGRESSION TOWARD FULFILLMENT OF DEGREE REQUIREMENTS

Students are expected to develop and follow a program of study outlining scheduled course work to complete degree requirements. If changes to the year of graduation are to be made after completion of the third year of study in the major program curriculum, revised plans should be submitted to an academic advisor for review and approval. Students pursuing a minor course of study should declare their minor no later than the third year.

Interdisciplinary Minors

- Entrepreneurial Engineering, Minor (p. 369)
- Materials Science and Engineering, Minor (p. 370)
- Sustainable Energy Systems, Minor (p. 371)

Entrepreneurial Engineering, Minor

The entrepreneurial engineering minor is designed for the technology-minded entrepreneur who seeks to understand disciplinary fundamentals, assess market needs, create technologies, and determine how to manufacture solutions sustainably and economically. The course requirements for the minor are designed to incorporate both engineering elements (product development and prototyping) and creative elements (product design), along with market and societal considerations (customer discovery and needs assessment). The elective option provides an opportunity to specialize in one of three areas: manufacturing, design, or venture creation. Versions of this minor are available for both engineering and nonengineering majors. Sign up for the minor by contacting your academic advisor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Core Courses

Code	Title	Hours
For Undergraduates in the College of Engineering		
GE 5010	Customer-Driven Technical Innovation for Engineers	4
GE 5020	Engineering Product Design Methodology	4
GE 5030	Iterative Product Prototyping for Engineers	4
GE 5100	Product Development for Engineers	4
For Undergraduates outside the College of Engineering		
GE 1110	Engineering Design	4
Complete three of the following:		
GE 5010	Customer-Driven Technical Innovation for Engineers	4
GE 5020	Engineering Product Design Methodology	4
GE 5030	Iterative Product Prototyping for Engineers	4
GE 5100	Product Development for Engineers	4

Elective

Code	Title	Hours
Complete one of the following:		
<i>Venture Creation</i>		
ENTR 2303	Entrepreneurial Marketing and Selling	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4510	Management Consulting Abroad	
<i>Design</i>		
ARTE 3901	Art and Design Special Topics	
ARTF 1122 and ARTF 1123	2D Fundamentals: Surface and Drawing and 2D Tools	

ARTF 1124 and ARTF 1125	3D Fundamentals: Structure and Drawing and 3D Tools
ARTG 1250	Design Process Context and Systems
ARTG 3462	Experience Design 1
ARTG 3463	Experience Design 2
Manufacturing	
IE 2310	Introduction to Industrial Engineering
IE 4512	Engineering Economy
IE 4525	Logistics and Supply Chain Management
IE 4530	Manufacturing Systems and Techniques
IE 4600	Systems Design for Sustainability

GPA Requirement

2.000 GPA required in the minor

Materials Science and Engineering, Minor

Materials Science and Engineering

The study of materials science and engineering has spurred breakthroughs in applications ranging from artificial limbs and organs, to space travel vehicles, to personal MP3 players. For example, the discovery of buckyballs and carbon nanotubes has led to the development of an unprecedented reduction in size of prototype electronic components and points the way to tomorrow's electronic technologies. Porous nanostructures of biocompatible materials are studied for targeted drug delivery within the body. The integration of polymers and semiconductors is used to create efficient, usable solar cells to reduce our dependence on fossil fuels. There are many more examples of both existing technologies and current research areas involving materials science and engineering that impact everyday life both today and in the future.

The minor in materials science and engineering is open to all students of the College of Engineering whose science and technical interests involve the design, processing, and optimization of engineering materials. Since the materials interests may vary across the engineering disciplines, the minor is composed of an interdisciplinary selection of courses that offer a high degree of flexibility to the student. The fundamental goals of the program are to offer the student a broad interdisciplinary program that includes a basic background in the relevant aspects of materials science and the engineering applications of materials. The objectives are to serve the needs of the chemical, civil, electrical, and mechanical engineering departments in providing a vehicle to expose students to materials science and engineering. Particular focus areas include electronic materials and processing for device applications; strength, wear, and corrosion-resistant coatings; molecular-level design of thin films and nanostructures; polymers and biomedical applications; and steels, concretes, and space-based structures.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
ME 2340	Introduction to Material Science	4

Electives

Code	Title	Hours
Complete three courses from the following disciplines:		11-13
Bioengineering		
BIOE 5820	Biomaterials	
Chemical Engineering		
CHME 5631	Biomaterials Principles and Applications	
CHME 5632	Advanced Topics in Biomaterials	
CHME 5699	Special Topics in Chemical Engineering (Introduction to Polymer Science)	
Civil and Environmental Engineering		
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
Electrical and Computer Engineering		
EECE 3392	Electronic Materials	
EECE 5606	Micro- and Nanofabrication	
EECE 7296	Electronic Materials (With Instructor Permission)	
Materials Engineering		
MATL 6285	Structure, Properties, and Processing of Polymeric Materials (With Instructor Permission)	
Mechanical and Industrial Engineering		
ME 4640	Mechanical Behavior and Processing of Materials	
ME 5374	Special Topics in Mechanical Engineering (Advances in Materials - Fundamentals, Properties, Applications)	
ME 5600	Materials Processing and Process Selection	
ME 5645	Environmental Issues in Manufacturing and Product Use	
Engineering Interdisciplinary		
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
Chemistry and Chemical Biology		
CHEM 3501	Inorganic Chemistry	
CHEM 5651	Materials Chemistry of Renewable Energy	
Capstone Design		
Code	Title	Hours
Complete one of the following major capstone requirements: ¹		4-5
BIOE 4792	Capstone Design 2	
CHME 4703	Capstone Design 2: Chemical Process Design	
CIVE 4765	Senior Design Project—Environmental	
CIVE 4767	Senior Design Project—Structural	
CIVE 4768	Senior Design Project—Transportation	
EECE 4792	Electrical and Computer Engineering Capstone 2	
MEIE 4702	Capstone Design 2	

GPA Requirement

2.000 GPA required in the minor

¹ Students may complete 4 semester hours of elective course work in place of the capstone design project (if major does not have a capstone design project requirement).

Sustainable Energy Systems, Minor

The sustainable energy systems minor is an interdisciplinary selection of courses designed to offer flexibility and exposure to the principles and applications of sustainable energy systems that are needed to meet the challenges of the world's growing energy needs. Students have an opportunity to learn technical skills, analysis techniques, design strategies, and principles of economics and energy policy in topic areas including traditional (fossil fuel), alternative, renewable, and sustainable energy sources and energy system applications.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Courses required to fulfill a major requirement (i.e., those that are specifically listed by course number and name on the curriculum sheet) may not be used to fulfill minor requirements. However, one engineering course from this minor with course number 4000 to 5999 in the student's major can be used as a technical elective or advanced engineering elective to fulfill the student's major requirements.

- Civil engineering students may not count Energy Systems: Science, Technology, and Sustainability (GE 3300) toward the sustainable energy systems minor if this course is used to fulfill major requirements.
- Chemical engineering students and mechanical engineering students may not count Chemical Engineering Thermodynamics 1 (CHME 2320) or Thermodynamics (ME 2380) toward the sustainable energy systems minor since these courses are required in their respective majors.
- Chemical engineering students may not count Conservation Principles in Chemical Engineering (CHME 2308) toward the sustainable energy systems minor since this course is required in their major.
- Industrial engineering students may not count Engineering Economy (IE 4512) toward the sustainable energy systems minor since this course is required in their major.

Core Energy Science, Technology Courses

Code	Title	Hours
Complete two of the following: 8		
CHME 2320	Chemical Engineering Thermodynamics 1	
or ME 2380	Thermodynamics	
GE 3300	Energy Systems: Science, Technology, and Sustainability	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
ENSY 5000	Fundamentals of Energy System Integration	

Environmental/Economics/Policy Courses

Code	Title	Hours
Complete one of the following: 4		
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ENVR 4515	Sustainable Development	
FINA 2720	Sustainability in the Business Environment	
ME 5645	Environmental Issues in Manufacturing and Product Use	
SOCL 3485	Environment, Technology, and Society	

Electives

Code	Title	Hours
Complete two of the following: 8		
CHME 2308	Conservation Principles in Chemical Engineering	
CHME 2320	Chemical Engineering Thermodynamics 1	
CHME 5630	Biochemical Engineering	
CHME 5699	Special Topics in Chemical Engineering	
CIVE 4566	Design for Sustainable Transportation: Netherlands	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
EECE 5680	Electric Drives	
EECE 5682	Power Systems Analysis 1	
EECE 5686	Electrical Machines	
EECE 5688	Analysis of Unbalanced Power Grids	
GE 3300	Energy Systems: Science, Technology, and Sustainability	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
ENSY 5000	Fundamentals of Energy System Integration	
IE 4512	Engineering Economy (IE students may not count this course toward a sustainable energy minor if used to fulfill a major requirement.)	
IE 4600	Systems Design for Sustainability	
ME 2380	Thermodynamics	
ME 5645	Environmental Issues in Manufacturing and Product Use	
ME 5685	Solar Thermal Engineering	
SBSY 5100	Sustainable Design and Technologies in Construction	
SBSY 5200	Sustainable Engineering Systems for Buildings	

GPA Requirement

2.000 GPA required in the minor

Bioengineering

Website (<http://www.bioe.neu.edu>)

Lee Makowski, PhD

Professor and Chair

206 Interdisciplinary Science and Engineering Complex
617.373.7805

Michael Jaeggli, PhD

Assistant Teaching Professor and Undergraduate Program Director

206 Interdisciplinary Science and Engineering Complex
617.373.6241

The Department of Bioengineering offers students a broad education built on fundamentals in science, mathematics, and engineering, with a focus on the biological applications of engineering. The program is designed to provide a rigorous engineering training along with a comprehensive understanding of the biological constraints intrinsic to designing artificial systems to interface with, augment, replace, repair, or monitor living systems. These constraints depend on the properties of the biological system involved and the functionality that is being created. The living system may be the human body; an ecosystem; or, more broadly, a bioreactor, tissue culture system, or any system with living components. The presence of naturally occurring biological tissue places special constraints on the design and implementation of artificial constructs and their interface to living systems. Bioengineers are engineers with comprehensive understanding of the engineering requirements intrinsic to working within a biological context.

Bioengineering is a relatively new field driven by the recognition that engineering of biological systems or systems that interface with living systems requires a multidisciplinary approach that takes into account the mechanical, electrical, chemical, and materials properties of the biological system. With that in mind, the bioengineering program has been designed to provide a rigorous engineering education that endows a broad understanding of the quantitative analysis of biological systems and a deep expertise in one of four areas of bioengineering. The curriculum is structured around a core of six courses that quantitatively analyze biological systems from multiple points of view. The core provides the fundamentals of quantitative physiology, electrical engineering in the context of excitable tissues; basics of mechanical engineering in the context of the musculoskeletal system; and thermodynamics, heat transfer, and fluids mechanics within the context of physiological systems. On completion of the core, students choose one of four concentrations (bioimaging and signal processing, cell and tissue engineering, biomechanics, or biomedical devices), which provides the opportunity to develop a deep level of expertise in an important area of bioengineering. The curriculum culminates with a two-semester capstone course to provide experience in design and implementation of a novel bioengineering project.

Program Objectives

Program educational objectives describe what graduates are expected to attain within a few years after graduation. The program educational objectives of the BS in bioengineering program are to prepare graduates to:

- Be technically proficient, innovative, and rigorous problem solvers who excel in the professional practice of engineering while maintaining a high standard of professional and ethical responsibility.
- Be multifaceted and able to work with and demonstrate leadership in multidisciplinary teams.

- Pursue advanced degrees in engineering, medicine, and other fields that leverage their technical and problem-solving skills.

Mission of the Department

The program is committed to providing a multidisciplinary education, making connections from the classroom and laboratory to research, co-op, and co-curricular experiences. The curriculum provides fundamentals in mathematics, physical sciences, and engineering science; laboratory experiences; as well as an emphasis on the special considerations intrinsic to design within a biological context. Through the university's general educational requirements, students gain awareness of the impact of engineering decisions in a broader societal and ethical context. The department encourages professional development through active participation and leadership in student organizations, societies, and departmental activities. As a result, the bioengineering program is designed to prepare students for success in industrial careers; graduate programs; or professional medical, law, and business schools.

Overview of Programs Offered

The Department of Bioengineering offers a Bachelor of Science in Bioengineering. Five-year Bachelor of Science in Bioengineering/Master of Science programs are also available in the following Master of Science disciplines: bioimaging and signal processing, cell and tissue engineering, biomedical devices, and biomechanics.

Other Programmatic Features

By participating in our cooperative education program, our graduates will have an opportunity to explore what career objectives fit their own skills and interests. The goal of this component of our program is to offer students valuable professional experience and contacts that will help get them started in their professional career, as well as to develop career management skills. The co-op program parallels the academic program in level of responsibility and sophistication.

The department also offers significant research opportunities throughout all fields of bioengineering, including participating in research centers based in our department and college, as well as new interdisciplinary graduate and professional master's programs.

The bioengineering curriculum is an innovative plan that is continuously and carefully assessed and evaluated to ensure that graduates of the program are fully prepared for success as professional bioengineers and are prepared for graduate or professional school.

Programs

Bachelor of Science in Bioengineering (BSBioE)

- Bioengineering (p. 372)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 433)

Bioengineering, BSBioE

Bioengineering is engineering in a biological context such as the human body, an ecosystem, or a bioreactor. In every case, the interface between engineered and biological systems places unique constraints on the design and implementation of devices, instruments, or implants. These depend on the properties of the biological system involved and the functionality that is being created.

The interface of engineering and medicine as embodied in bioengineering will be one of the most exciting endeavors and greatest adventures of the 21st century. Job opportunities are expected to expand dramatically

with a focus on development of entirely new classes of products, instrumentation, and implants. The impact to human health will be extraordinary.

Bioengineering is intrinsically multidisciplinary and it is essential that students learn the languages used by multidisciplinary teams. To that end, our curriculum is structured around a core of six courses that analyze biological systems from every possible quantitative point of view. On the completion of the core, students choose one of four concentrations, which provides the opportunity to develop a deep level of expertise in a specific area of bioengineering.

Bioengineering students will have unique opportunities in the classroom, research labs, and experiential learning. The projects that they may be able to contribute to include bio-bandages that monitor bacterial growth or that help damaged ligaments heal faster; sheets of cells folded like origami to form a working kidney; and new materials that—like a leaf in the sun—automatically sense and adapt to changes in the environment. This is truly an exciting time!

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in BIOE courses

Bioengineering Core Requirements

Complete 39 semester hours in bioengineering core requirements as indicated below.

Code	Title	Hours
Required Courses		
BIOE 2355	Quantitative Physiology for Bioengineers	4
BIOE 2365 and BIOE 2366	Bioengineering Measurement, Experimentation, and Statistics and Lab for BIOE 2365	5
BIOE 2350	Biomechanics	4
BIOE 3380	Biomolecular Dynamics and Control	4
BIOE 3310	Transport and Fluids for Bioengineers	4
BIOE 3210	Bioelectricity	4
Bioengineering Capstone		
BIOE 4790	Capstone Design 1	4
BIOE 4792	Capstone Design 2	4
Supplemental Credit		
3 semester hours from the following course count toward the bioengineering core requirements:		3
GE 1501	Cornerstone of Engineering 1	

3 semester hours from the following course count toward the bioengineering core requirements:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
GE 1000	Introduction to the Study of Engineering	1
BIOE 2000	Introduction to Engineering Co-op Education	1
BIOE 3000	Professional Issues in Engineering	1
Additional Required Courses		
Credit from the following course counts toward requirements above:		1
GE 1501	Cornerstone of Engineering 1	

Concentration

Complete 20 semester hours in one of the following four concentrations. Requirements for the concentrations are listed below (p. 374).

- Bioimaging and Signal Processing (p. 374)
- Cell and Tissue Engineering (p. 374)
- Biomechanics (p. 374)
- Biomedical Devices (p. 374)

Supporting Courses: Mathematics/Science

Complete 37 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	5
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
GE 2361	Mathematical Methods for Engineers	4
PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171	5
PHYS 1175 and PHYS 1176 and PHYS 1177	Physics 2 for Bioscience and Bioengineering and Lab for PHYS 1175 and Interactive Learning Seminar for PHYS 1175	5

Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Writing and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		

ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
	Complete seven academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.	28

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

136 total semester hours required

Concentrations**CONCENTRATION IN BIOIMAGING AND SIGNAL PROCESSING**

Code	Title	Hours
Required Courses		
BIOE 5235	Biomedical Imaging	4
BIOE 5810	Design of Biomedical Instrumentation	4
EECE 2520	Fundamentals of Linear Systems	4
Elective Courses		
Complete two of the following:		8
BIOE 4991	Research	
BIOL 5581	Biological Imaging	
EECE 2530	Fundamentals of Electromagnetics	
EECE 3468	Noise and Stochastic Processes	
EECE 4512	Biomedical Electronics	
EECE 4626	Image Processing and Pattern Recognition	
EECE 5648	Biomedical Optics	
EECE 5664	Biomedical Signal Processing	

CONCENTRATION IN CELL AND TISSUE ENGINEERING

Code	Title	Hours
Required Courses		
BIOE 5410	Molecular Bioengineering	4
BIOE 5420	Cellular Engineering	4
BIOE 5430	Principles and Applications of Tissue Engineering	4
Elective Courses		
Complete two of the following:		8
BIOE 4991	Research	
BIOE 5650	Multiscale Biomechanics	

BIOE 5656	Fields, Forces, and Flows in Biological Systems
BIOE 5820	Biomaterials
CHME 5630	Biochemical Engineering

CONCENTRATION IN BIOMECHANICS

Code	Title	Hours
Required Courses		
BIOE 5630	Physiological Fluid Mechanics	4
BIOE 5650	Multiscale Biomechanics	4
ME 5665	Musculoskeletal Biomechanics	4
Elective Courses		
Complete two of the following:		8
BIOE 4991	Research	
BIOE 5656	Fields, Forces, and Flows in Biological Systems	
ME 4508	Mechanical Engineering Computation and Design	
ME 4555	System Analysis and Control	
ME 5667	Solid Mechanics of Cells and Tissues	

CONCENTRATION IN BIOMEDICAL DEVICES

Code	Title	Hours
Required Courses		
BIOE 5250	Design, Manufacture, and Evaluation of Medical Devices	4
BIOE 5810	Design of Biomedical Instrumentation	4
BIOE 5820	Biomaterials	4
Elective Courses		
Complete two of the following:		8
BIOE 4991	Research	
BIOE 5850	Design of Implants	
EECE 2750	Enabling Engineering	
ME 2340 and ME 2341	Introduction to Material Science and Lab for ME 2340	
ME 4508	Mechanical Engineering Computation and Design	
ME 4555	System Analysis and Control	

Plan of Study**Four Years, Two Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Students will need to have AP credit for Calc. AB (MATH1341-Calculus 1 – 4 SH)	4	PHYS 1171 (ND)	3	General elective	4	Vacation	0
MATH 1342	4	PHYS 1172 (AD)	1	General elective	4		
CHEM 1151	4	PHYS 1173	1				
CHEM 1153	0	GE 1502 (ER)	4				
GE 1000	1	GE 2361	4				
GE 1501	4	General elective	4				

ENGW 1111 (WF)	4				
	21	17	8	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1115 (ND)	4	BIOE 2000	1	BIOE 3310	4	Co-op	0
BIOL 1116	1	BIOE 2350	4	General elective	4		
PHYS 1175 (ND)	3	BIOE 2355	4				
PHYS 1176 (AD)	1	CHEM 2311	4				
PHYS 1177	1	CHEM 2312	1				
BIOE 2365 (AD)	4	CHEM 2319	0				
BIOE 2366	1	General elective	4				
General elective	4						
	19		18		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BIOE 3000	1	BIOE 4790 (EI, CE)	4	Co-op	0
		BIOE 3210	4	General elective	4		
		BIOE 3380	4				
		BIOE elective 1	4				
		BIOE elective 2	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	BIOE 4792	4		
ENGW 3302 (to be taken online)	4	BIOE elective 3	4		
		BIOE elective 4	4		
		BIOE elective 5	4		
	4		16		0

Total Hours: 136

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	4	Vacation	4
CHEM 1151	4	PHYS 1171 (ND)	3				
CHEM 1153	0	PHYS 1172 (AD)	1				
GE 1000	1	PHYS 1173	1				
GE 1501	4	GE 1502 (ER)	4				

ENGW 1111 (WF)	4	General elective	4		
	17		17	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOE 2365 (AD)	4	BIOE 2000	1	Vacation	4	Co-op	0
BIOE 2366	1	BIOE 2350	4				
BIOL 1115 (ND)	4	BIOE 2355	4				
BIOL 1116	1	CHEM 2311	4				
GE 2361	4	CHEM 2312	1				
PHYS 1175 (ND)	3	CHEM 2319	0				
PHYS 1176 (AD)	1	General elective	4				
PHYS 1177	1						
	19		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		BIOE 3210	4	BIOE 3310	4	Co-op	0
		BIOE 3380	4	General elective	4		
		BIOE elective 1	4				
		ENGW 3302 (WD)	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		BIOE 3000	1	BIOE 4790 (EI, CE)	4	Co-op	0
		BIOE elective 2	4	General elective	4		
		BIOE elective 3	4				
		BIOE elective 4	4				
		General elective	4				
	0		17		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		BIOE 4792	4
		BIOE elective 5	4
		General elective	4
		General elective	4
	0		16

Total Hours: 136

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation		Vacation	
CHEM 1151	4	PHYS 1171 (ND)	3				
CHEM 1153	0	PHYS 1172 (AD)	1				
GE 1000	1	PHYS 1173	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOE 2000	1	Co-op		Co-op		Vacation	
BIOE 2365 (AD)	4						
BIOE 2366	1						
BIOL 1115 (ND)	4						
BIOL 1116	1						
GE 2361	4						
PHYS 1175 (ND)	3						
PHYS 1176 (AD)	1						
PHYS 1177	1						
	20		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOE 2350	4	Co-op		Co-op		BIOE 3310	4
BIOE 2355	4					General elective	4
CHEM 2311	4						
CHEM 2312	1						
CHEM 2319	0						
General elective	4						
	17		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOE 3000	1	Co-op		Co-op		BIOE 4790 (EI, CE)	4
BIOE 3210	4					General elective	4
BIOE 3380	4						
BIOE elective 1	4						
ENGW 3302 (WD)	4						
	17		0		0		8

Year 5			
Fall	Hours	Spring	Hours
BIOE 4792	4	BIOE elective	4
		4	
BIOE elective 2	4	BIOE elective 5	4
BIOE elective 3	4	General elective	4
General elective	4	General elective	4
	16		16

Total Hours: 136

Chemical Engineering

Website (<http://www.northeastern.edu/che>)**Thomas J. Webster, PhD**Professor and Chair
Art Zafiropoulo Chair in Engineering**Ronald J. Willey, PhD**

Professor and Vice Chair

313 Snell Engineering Center

617.373.2989

617.373.2209 (fax)

The chemical engineering program offers students a broad education built on fundamentals in science, mathematics, and engineering, which are then applied to a variety of contemporary problems using modern tools, such as computational software and computer-aided design. Chemical engineers have traditionally been employed in chemical, petrochemical, agricultural chemical, pulp and paper, plastics, cosmetics, and textiles industries and in consulting and design firms. Today, chemical engineers also play an integral role in emerging biological and advanced materials fields, including nanotechnology. For example, chemical engineers are creating new materials needed for space exploration, alternative energy sources, and faster, self-powered computer chips. In biotechnology and bioengineering, chemical engineers are working to understand human diseases, developing new therapies and drug delivery systems, and producing new medicines through cell culture techniques. Chemical engineers employ nanotechnology to revolutionize sensors, security systems, and medical diagnostics and treatments. In addition to creating important products, chemical engineers are also involved in protecting our environment by exploring ways to reduce acid rain and smog; to recycle and reduce wastes; to develop new sources of environmentally clean energy; and to design inherently safe, efficient, and "green" processes. The role of chemical engineering is to develop new products and to design processes while reducing costs, increasing production, and improving the quality and safety of new products.

Mission of the Department

The faculty of the chemical engineering program are committed to providing a practice-oriented education through project and problem-based learning and drawing connections between classroom learning and co-op experiences. The educational curriculum provides fundamentals in mathematics, physical sciences, and engineering science as well as real-world design and laboratory experiences. Through the university's academic core requirements, NUPath, students gain awareness of the impact of engineering decisions in a broader societal and ethical context. Cooperative education enables students to integrate practical

workplace knowledge with classroom learning so the educational experiences are synergistic and deepen the learning process. The chemical engineering community encourages professional development through active participation and leadership in student organizations, professional societies, and departmental activities. As a result, the chemical engineering program prepares students for industrial careers, graduate programs, or professional medical, law, and business schools.

Overview of Programs Offered

Please see the programs tab (p. 377) for a list of the department's academic programs.

The program educational objectives are as follows. Within a few years after graduation, graduates of the chemical engineering program are expected to obtain the ability to function successfully in a variety of fields in chemical engineering or in advanced study that uses the problem-solving skills taught in chemical engineering; identify problems, collect necessary information, and analyze data to draw appropriate conclusions and to make informed decisions; function effectively in a diverse workplace using interpersonal and communicative skills gained from their chemical engineering training; recognize an economic, environmental, health and safety, or sustainability situation in need of improvement, then make suggestions that improve this situation.

The program's student objectives are as follows. When a student graduates from the chemical engineering program, they will have an ability to identify, formulate, and solve complex chemical engineering problems by applying principles of engineering, science, and mathematics; an ability to apply chemical engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, and global, cultural, social, environmental, and economic factors, as well as identifying and mitigating the hazards associated with that design to promote health and safety; an ability to communicate effectively with a range of audiences; an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts including protecting the public and the environment by performing their work in a safe and environmentally conscious manner; an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives; an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions; and an ability to acquire and apply new knowledge as needed, using appropriate learning strategies.

The faculty of the chemical engineering program are committed to providing a practice-oriented education through experiential learning and by drawing connections between classroom learning and co-op experiences. The educational curriculum provides fundamentals in mathematics, physical sciences, and engineering science, as well as real-world design and laboratory experiences. Through the university's general education requirements, students gain awareness of the impact of engineering decisions in a broader societal and ethical context.

Other Programmatic Features

By participating in our cooperative education program, our graduates will have an opportunity to explore what career objectives fit their own skills and interests. The goal of this component of our program is to offer students valuable professional experience and contacts that will help get them started in their professional career, as well as to develop career management skills. The co-op program parallels the academic program in level of responsibility and sophistication.

The department also offers significant research opportunities throughout all fields of chemical engineering, including participating in research centers based in our department and college, as well as new interdisciplinary graduate and professional master's programs.

The chemical engineering community creates opportunities for professional development through active participation and leadership in student organizations, professional societies, and departmental activities. As a result, the chemical engineering program prepares students for successful industrial careers; graduate programs; or professional medical, law, and business schools. The chemical engineering curriculum is continuously evaluated and improved to ensure that graduates of the program are given every opportunity for future success as professional chemical engineers and are prepared for graduate or professional school.

Programs

Bachelor of Science in Chemical Engineering (BSCHE)

- Chemical Engineering (p. 377)
- Chemical Engineering and Physics (p. 383)
- Chemical Engineering and Biochemistry (p. 381)

Minor

- Biochemical Engineering (p. 385)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 433)

Chemical Engineering, BSCHE

Provides a BS degree in chemical engineering. Upon completion, one can move in several career directions. Traditionally, the degree prepares one for practice in the engineering and the control of processes involving chemicals, biotechnology feedstocks, and pharmaceuticals. The degree can also serve as a springboard to advance study in chemical engineering. Nontraditional postgraduate pathways include obtaining a law school degree related to patent law, an MBA, or a medical degree for a career in the health professions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Engineering

Complete 54 semester hours in engineering as indicated below:

Code	Title	Hours
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 2320	Chemical Engineering Thermodynamics 1	4
CHME 3312	Transport Processes 2 and Separations	4
CHME 3315	Chemical Engineering Experimental Design 1 (Chem Eng Lab 1)	4
CHME 3322	Chemical Engineering Thermodynamics 2	4
CHME 4315	Chemical Engineering Experimental Design 2 (Chem Eng Lab 2)	4
CHME 4510	Chemical Engineering Kinetics	4
CHME 4512	Chemical Engineering Process Control	4
CHME 4701	Capstone Design 1: Process Analysis	4
CHME 4703	Capstone Design 2: Chemical Process Design	4

Advanced Engineering Elective

Complete one course numbered between 4000 and 5999 in any of the following subject areas:

BIOE, CHME, CIVE, EECE, ME, IE, MEIE, and ENGR

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement:

GE 1501 Cornerstone of Engineering 1

3 semester hours from the following course count toward the engineering requirement:

GE 1502 Cornerstone of Engineering 2

Professional Development

Complete 4 semester hours in professional development as indicated below:

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CHME 2000	Introduction to Engineering Co-op Education	1
CHME 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:

GE 1501 Cornerstone of Engineering 1

Supporting Courses: Mathematics/Science

Complete 30 semester hours in mathematics and science as indicated below:

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4

MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Complete one of the following:

BIOL 1111	General Biology 1
BIOL 1115	General Biology 1 for Engineers
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement:

GE 1502 Cornerstone of Engineering 2

Supporting Courses: Advanced Science

Complete 14 semester hours in advanced science as indicated below.

Code	Title	Hours
Complete one of the following:		
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
CHEM 2315 and CHEM 2316 and CHEM 2324	Organic Chemistry 1 for Chemistry Majors and Lab for CHEM 2315 and Recitation for CHEM 2315	5
Complete one of the following:		
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5
CHEM 2317 and CHEM 2318 and CHEM 2325	Organic Chemistry 2 for Chemistry Majors and Lab for CHEM 2317 and Recitation for CHEM 2317	5

Complete one of the following:

BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	4-6
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	
BIOL 3603	Mammalian Systems Physiology	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	
CHEM 3403 and CHEM 3404	Quantum Chemistry and Spectroscopy and Lab for CHEM 3403	
CHEM 3501	Inorganic Chemistry	
CHEM 4621 and CHEM 4622	Introduction to Chemical Biology and Lab for CHEM 4621	

CHEM 4628 and CHEM 4629	Introduction to Spectroscopy of Organic Compounds and Identification of Organic Compounds
PHYS 2303	Modern Physics
PHYS 3601	Classical Dynamics

Writing Requirements

Code	Title	Hours
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		
		24

Major GPA Requirement

2.000 minimum required in CHME courses

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

134 total semester hours required

Plan of Study

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342	4	MATH 2321	4	CHME 2308	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341-Calculus 1 – 4 SH)	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1151	4	PHYS 1152 (AD)	1				
CHEM 1153	0	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General elective	4				
ENGW 1111 (WF)	4						
	21		17		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHME 2000	1	Co-op	0	Co-op	0	CHEM 2313	4

MATH 2341	4	ENGW 3302 (To be taken online)	4	CHEM 2314	1
CHEM 2311	4			CHEM 2320	0
CHEM 2312	1			CHME 2320	4
CHEM 2319	0				
CHME 2310	4				
BIOL 1115 or PHYS 1155	4-5				
and PHYS 1156 and PHYS 1157					
	18-19		4		0
					9

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHME 3315 Lab 1 (AD, WI)	4	Co-op	0	Co-op	0	General elective	4
CHME 3312	4					General elective	4
CHME 3322	4						
General elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours
CHME 3000	1	CHME 4512	4
CHME 4510	4	CHME 4703	4
CHME 4701	4	Advanced engineering elective	4
CHME 4315 Lab 2 (AD, WI)	4	General elective	4
Advanced science elective	4		
	17		16

Total Hours: 134-135

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342	4	MATH 2321	4	CHME 2308	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341-Calculus 1 – 4 SH)	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1151	4	PHYS 1152 (AD)	1				
CHEM 1153	0	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General elective	4				

ENGW 1111 (WF)	4				
	21	17	8	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	CHEM 2313	4	Advanced science elective	4	Co-op	0
CHEM 2311	4	CHEM 2314	1	General elective	4		
CHEM 2312	1	CHEM 2320	0				
CHEM 2319	0	CHME 2000	1				
CHME 2310	4	CHME 2320	4				
BIOL 1115 or PHYS 1155 and PHYS 1156 and PHYS 1157	4-5	CHME 3312	4				
		General elective	4				
	17-18		18		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3315	4	General elective	4	Co-op	0
ENGW 3302 (To be taken online)	4	CHME 3322	4	General elective	4		
		CHME 4510	4				
		CHME 4701	4				
	4		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	CHME 3000	1
		CHME 4315	4
		CHME 4512	4
		CHME 4703	4
		Advanced engineering elective	4
	0		17

Total Hours: 134-135

Five Years, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				

ENGW 1111	4	General elective	4		
	17		17	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311	4	CHEM 2313	4	Vacation	0	Co-op	0
CHEM 2312	1	CHEM 2314	1				
CHEM 2319	0	CHEM 2320	0				
CHME 2308	4	CHME 2000	1				
MATH 2321 (FQ)	4	CHME 2310	4				
BIOL 1115 or PHYS 1155 and PHYS 1156 and PHYS 1157	4-5	CHME 2320	4				
		MATH 2341	4				
	17-18		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3312	4	General elective	4	Co-op	0
		CHME 3315 (AD, WI)	4	General elective	4		
		CHME 3322	4				
		ENGW 3302	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3000	1	General elective	4	Co-op	0
		CHME 4315 (AD, WI)	4	General elective	4		
		CHME 4510	4				
		CHME 4701	4				
		General elective	4				
	0		17		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CHME 4512	4
		CHME 4703 (EI, CE)	4
		Advanced engineering elective	4
		Advance science elective	4
	0		16

Total Hours: 134-135

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	Co-op	0	Co-op	0	CHEM 2313	4
CHEM 2311	4					CHEM 2314	1
CHEM 2312	1					CHEM 2320	0
CHEM 2319	0					CHME 2320	4
CHME 2000	1						
CHME 2308	4						
BIOL 1115 or PHYS 1155 and PHYS 1156 and PHYS 1157	4-5						
	18-19		0		0		9

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHME 2310	4	Co-op	0	Co-op	0	General elective	4
CHME 3322	4					General elective	4
MATH 2341	4						
General elective	4						
	16		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHME 3000	1	Co-op	0	Co-op	0	Vacation	0
CHME 3312	4						
General elective	4						
CHME 3315 (AD, WI)	4						
ENGW 3302	4						
	17		0		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHME 4315 (AD, WI)	4	CHME 4512	4				
CHME 4510	4	CHME 4703 (EI, CE)	4				

CHME 4701 4 General elective 4

Advanced science elective 4 Advanced engineering elective 4

16 16

Total Hours: 134-135

Chemical Engineering and Biochemistry, BSCHE

This intercollege combined major serves students who would like to explore their interest in biochemistry while earning the benefit of a Bachelor of Science degree in chemical engineering. The program combines the fundamentals of biochemistry with the engineering skills necessary for scale-up of biochemical processes. Successful graduates will be well-qualified to enter the growing biotechnology industry and be able to converse from the chemistry of organisms to the design of vessels for successful synthesis of cells and pharmaceuticals.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in CHME courses

Mathematics/Science Requirement

Complete 44 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
BIOL 4707	Cell and Molecular Biology	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Advanced Biology Elective

Complete one course in the following range: 4

BIOL 2311 to BIOL 5999

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1502 Cornerstone of Engineering 2

Advanced Science Requirement

Complete 23 semester hours in advanced science as indicated below.

Code	Title	Hours
BIOL 1115	General Biology 1 for Engineers	4
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	5

Advanced Chemistry Elective

Complete one course in the following range: 4

CHEM 2310 to CHEM 5999

Engineering

Complete 50 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 2320	Chemical Engineering Thermodynamics 1	4
CHME 3312	Transport Processes 2 and Separations	4
CHME 3315	Chemical Engineering Experimental Design 1	4
CHME 3322	Chemical Engineering Thermodynamics 2	4
CHME 4315	Chemical Engineering Experimental Design 2	4
CHME 4510	Chemical Engineering Kinetics	4
CHME 4512	Chemical Engineering Process Control	4
CHME 4701	Capstone Design 1: Process Analysis	4
CHME 4703	Capstone Design 2: Chemical Process Design	4

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement: 3

GE 1501 Cornerstone of Engineering 1

3 semester hours from the following course count toward the engineering requirement: 3

GE 1502 Cornerstone of Engineering 2

Professional Development

Complete 4 semester hours in professional development as indicated below.

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CHME 2000	Introduction to Engineering Co-op Education	1
CHME 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Additional NUPATH Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3307	Advanced Writing in the Sciences	
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPATH Requirements Through General Electives

NUPATH requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Complete four academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

145 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151 (ND)	4	MATH 1342 (FQ)	4	CHME 2308	4	Vacation	0
CHEM 1153	0	PHYS 1151 (ND)	3	MATH 2321	4		
ENGW 1111	4	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
MATH 1341 (FQ)	4	General elective	4				
		17		17		8	
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1115 (ND)	4	CHEM 2313	4	BIOL 2301 and BIOL 2302	5	Co-op	0
CHEM 2311	4	CHEM 2314	1	General elective		4	
CHEM 2312	1	CHEM 2320	0				
CHEM 2319	0	CHEM 2331 (AD, WI)	4				
CHME 2310	4	CHEM 2332	1				
MATH 2341	4	CHME 2000	1				
		CHME 2320	4				
		General elective	4				
	17		19		9		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3312	4	BIOL 3611	4	Co-op	0
		CHME 3315 (Chem. Eng. Lab 1)	4	BIOL 3612 (WI)	1		
		CHME 3322	4	General elective	4		
		ENGW 3315	4				
	0		16		9		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BIOL 4707	4	Vacation	0	Co-op	0
		CHME 3000	1				
		CHME 4315 (Chem.Eng.Lab 2)	4				
		CHME 4510	4				
		CHME 4701	4				
	0		17		0		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CHME 4512	4
		CHME 4703 (EI, WI, CE)	4
		Advanced chemistry elective	4
		Advanced biology elective	4
	0		16

Total Hours: 145

Chemical Engineering and Physics, BSChE

This intercollege combined major serves students who would like to explore their interest in physics while earning the benefit of a Bachelor of Science degree in chemical engineering. Upon completion, the successful student will understand the fundamental physics behind many chemical-

based processes, resulting in the ability to design and practice in the field of engineering that deals with the movement of mass, heat transfer, and reactions involved in the processing of various materials.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in CHME courses

Mathematics/Science Requirement

Complete 47 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
PHYS 3601	Classical Dynamics	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5318	Principles of Experimental Physics	4
Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Advanced Science Requirement

Complete 18 semester hours in advanced chemistry as indicated below.

Code	Title	Hours
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5

PHYS 2303	Modern Physics	4
PHYS 5115	Quantum Mechanics	4
Complete one of the following:		5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	
CHEM 2317 and CHEM 2318 and CHEM 2325	Organic Chemistry 2 for Chemistry Majors and Lab for CHEM 2317 and Recitation for CHEM 2317	

Engineering

Complete 54 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
PHYS 3600	Advanced Physics Laboratory	4
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 2320	Chemical Engineering Thermodynamics 1	4
CHME 3312	Transport Processes 2 and Separations	4
CHME 3315	Chemical Engineering Experimental Design 1	4
CHME 3322	Chemical Engineering Thermodynamics 2	4
CHME 4315	Chemical Engineering Experimental Design 2	4
CHME 4510	Chemical Engineering Kinetics	4
CHME 4701	Capstone Design 1: Process Analysis	4
CHME 4703	Capstone Design 2: Chemical Process Design	4
Advanced Engineering Elective		
Complete one course numbered between 4000 and 5999 in any of the following subject areas: CHME, CIVE, EECE, ME, IE, MEIE, and ENGR		4
Supplemental Credit		
3 semester hours from the following course count toward the engineering requirement: GE 1501 Cornerstone of Engineering 1		3
3 semester hours from the following course count toward the engineering requirement: GE 1502 Cornerstone of Engineering 2		3

Professional Development

Complete 4 semester hours in professional development as indicated below.

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CHME 2000	Introduction to Engineering Co-op Education	1
CHME 3000	Professional Issues in Engineering	1
Additional Required Courses		

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements Through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151	4	CHME 2308	4	MATH 2321	4	Vacation	0
CHEM 1153	0	GE 1502 (ER)	4	PHYS 1155 (ND)	3		
ENGW 1111 (WF)	4	MATH 1342 (FQ)	4	PHYS 1156 (AD)	1		
GE 1000	1	PHYS 1151 (ND)	3	PHYS 1157	1		
GE 1501	4	PHYS 1152 (AD)	1				
MATH 1341 (FQ)	4	PHYS 1153	1				
		17			17		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311	4	CHEM 2313 and CHEM 2314 and CHEM 2320	5	General elective (online course or advanced placement)	4	Co-op	0
CHEM 2312	1	CHME 2000	1				

CHEM 2319	0	CHME 2310	4
CHME 2320	4	CHME 3322	4
PHYS 2371 (ND)	3	PHYS 2303 (ND)	4
PHYS 2372 (EI)	1		
MATH 2341	4		
	17	18	4
			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3312	4	PHYS 3600 (ND, AD, WI)	4	Co-op	0
		CHME 3315	4	General elective	4		
		ENGW 3315	4				
		PHYS 3601	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3000	1	Vacation	0	Co-op	0
		CHME 4315	4				
		CHME 4510	4				
		CHME 4701	4				
		PHYS 3602	4				
	0		17		0		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CHME 4703 (EI, CE)	4
		PHYS 5115 (ND, FQ)	4
		PHYS 5318 (ND, AD, CE)	4
		Advanced engineering elective	4
	0		16

Total Hours: 139

Biochemical Engineering, Minor

This minor exposes the student to the fundamentals of chemical engineering. Focus is on the major conservation principles such as the conservation of mass and the conservation of energy, followed by how chemical reactions and processing are governed by these principles.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Courses taken pass/fail cannot be used to fulfill minor requirements.

Required Chemical Engineering Courses

Code	Title	Hours
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 3312	Transport Processes 2 and Separations	4
CHME 5630	Biochemical Engineering	4

Capstone

Code	Title	Hours
CHME 4703	Capstone Design 2: Chemical Process Design	4

Supporting Courses: Math and Science

Code	Title	Hours
MATH 1241	Calculus 1	4
or MATH 1341	Calculus 1 for Science and Engineering	
MATH 1242	Calculus 2	4
or MATH 1342	Calculus 2 for Science and Engineering	
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
BIOL 2301	Genetics and Molecular Biology	4
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5
Complete one of the following:		5
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	5

GPA Requirement

2.000 GPA required in the minor

Civil and Environmental EngineeringWebsite (<http://www.civ.neu.edu>)

Jerome F. Hajjar, PhD, PE
CDM Smith Professor and Chair

R. Edward Beighley, PhD
Associate Professor and Associate Chair for Undergraduate Studies

400 Snell Engineering Center
617.373.2444
617.373.4419 (fax)

Overview

As a leader in research and education, the Department of Civil and Environmental Engineering at Northeastern University prepares undergraduate engineers to excel in their chosen careers,

including engineering practice, academia, infrastructure management, land-use planning and development, urban and regional planning, public sector leadership, and many others.

With a strategic focus in urban engineering, and through a range of teaching and research strengths, anchored by several multidisciplinary, multi-institutional centers and programs, the department prepares future engineers to address the global, complex, and ever-evolving engineering challenges of our time by building on current department strengths and expanding into vital areas. Three overarching themes are emphasized: environmental health, civil infrastructure security, and sustainable resource engineering. These themes are aligned with the department's premier strengths in simulation (both computational and experimental), smart sensing, data and network science, and urban informatics.

Experience tells us that civil and environmental engineering graduates will enter almost every field imaginable. The knowledge and skills acquired—understanding science, critical thinking, effective communication, and understanding the social context, among them—form an excellent foundation for a host of careers, as well as for a fulfilling life outside the world of work.

Our students have an opportunity to obtain a broad knowledge base in science, engineering, and general studies that allows them flexibility in career development and graduate education. At the same time, our graduates should be responsible and scientifically educated citizens, prepared to contribute personally as well as professionally to an educated, democratic society. Our programs have been designed with six general electives that permit students to explore or acquire further depth in other fields of interest. Students can use these electives to earn a minor in architectural engineering, business, architectural history, music, computer science, or any number of other fields.

Mission of the Department

The mission for the Department of Civil and Environmental Engineering is to provide a premier undergraduate and graduate education to help prepare globally oriented civil and environmental engineering leaders; to conduct world-class, use-inspired disciplinary and interdisciplinary research; and to serve a diverse constituency through public service and outreach.

CIVIL ENGINEERING

Civil engineers apply their knowledge of mathematics and sciences to improve and protect the natural environment and to design and create the built environment for community living, industry, and transportation. Civil engineering encompasses several disciplines, including environmental and water resources engineering, transportation planning and engineering, structural engineering, geotechnical engineering, and construction management.

The program educational objectives for the Bachelor of Science in Civil Engineering are as follows:

1. The civil engineering program at Northeastern University prepares graduates to contribute to society as civil engineers and in other professions that benefit from a technical education.
2. Within a few years of graduation, many of our graduates will be working in responsible engineering positions that will qualify them to take the professional engineer (PE) licensure exam, and will prepare them to successfully pursue advanced study in civil engineering and other fields.

ENVIRONMENTAL ENGINEERING

By applying their background in engineering, chemical, biological, and ecological principles, Northeastern's environmental engineering

graduates create, invent, and lead a new generation of engineers who will be able to address key challenges—including developing sustainable resource engineering solutions to environmental health needs with an understanding of institutional and legal frameworks, all related to interconnected challenges in water, energy, air pollution, and waste management—to protect and provide a better quality of life to the human race. Northeastern's program provides graduates with the core skills necessary to practice environmental engineering and to work with other engineers and urban and regional planners in an interdisciplinary environment.

The program educational objectives for the Bachelor of Science in Environmental Engineering are as follows:

1. The environmental engineering program at Northeastern University prepares graduates to contribute to society as environmental engineers and in other professions that benefit from a technical education.
2. Within a few years of graduation, many of our graduates will be working in responsible engineering positions that will qualify them to take the professional engineer (PE) licensure exam, and will prepare them to successfully pursue advanced study in environmental engineering and other fields.

Other Programmatic Features

By participating in our cooperative education program, our graduates will have an opportunity to explore what career objectives fit their own skills and interests. The goal of this component of our program is to offer students valuable professional experience and contacts that will help get them started in their professional career, as well as to develop career management skills. The co-op program parallels the academic program in level of responsibility and sophistication.

The department also offers significant research opportunities throughout all fields of civil and environmental engineering, including participating in research centers based in our department and college, as well as new interdisciplinary graduate and professional master's programs as part of the five-year Bachelor of Science/Master of Science programs.

Programs

Bachelor of Science (BSEnvE)

- Environmental Engineering, BSEnvE (p. 391)

Bachelor of Science (BS)

- Environmental Engineering and Public Health (p. 394)

Bachelor of Science in Civil Engineering (BSCE)

- Civil Engineering, BSCE (p. 386)

Minor

- Architectural Engineering, Minor (p. 396)
- Civil Engineering, Minor (p. 397)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 433)

Civil Engineering, BSCE

Civil engineers play a vital role in human progress and well-being worldwide. Conceptualizing, innovating, designing, and building sustainable infrastructure and environments is fundamental in helping society progress. Modern challenges, including engineering a resilient and sustainable urban infrastructure; establishing clean water and a clean

environment; and advancing technologies in computing, sensing, and human health, are all part of the development of society.

Civil engineers design and construct buildings, bridges, tunnels, dams, and river systems. They also plan, design, construct, and manage highways, railroads, canals, and airports; regulate rivers and control floods; and design and build systems for water distribution and environmental protection.

With a broad range of applications, our civil engineering students have the opportunity to explore a range of disciplinary and interdisciplinary tracks, including environmental and water systems, structural engineering, transportation engineering, geotechnical and geoenvironmental engineering, construction management, civil infrastructure security, environmental health, and sustainable resource engineering.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in major (CIVE) courses

Engineering

Complete 61 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CIVE 2221 and CIVE 2222	Statics and Strength of Materials and Recitation for CIVE 2221	4
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	5
CIVE 2320 and CIVE 2321	Structural Analysis 1 and Recitation for CIVE 2320	4
CIVE 2324 or CIVE 3425	Reinforced Concrete Design Steel Design	4
CIVE 2331	Fluid Mechanics	4
CIVE 2334	Environmental Engineering 1	4
CIVE 2340 and CIVE 2341	Soil Mechanics and Lab for CIVE 2340	5
GE 3300	Energy Systems: Science, Technology, and Sustainability	4
Civil Engineering Project Elective		
Complete one of the following:		4
CIVE 4534 and CIVE 4535	Environmental Engineering 2 and Lab for CIVE 4534	
CIVE 4542	Foundation Engineering	
CIVE 4554	Highway Engineering	
CIVE 5536	Hydrologic Engineering	

Senior Design Project

Complete one of the following:		5
CIVE 4765	Senior Design Project—Environmental	
CIVE 4767	Senior Design Project—Structural	
CIVE 4768	Senior Design Project—Transportation	

Civil Engineering Technical Electives

Complete 11 semester hours from the following:		11
CIVE 2324	Reinforced Concrete Design	
CIVE 3425	Steel Design	
CIVE 3435	Environmental Pollution Fate and Transport	
CIVE 4540	Resource Recovery and Waste Treatment Technologies Abroad	
CIVE 4542	Foundation Engineering	
CIVE 4554	Highway Engineering	
CIVE 4566	Design for Sustainable Transportation: Netherlands	
CIVE 4575	Construction Management	
CIVE 4777	Climate Hazards and Resilient Cities Abroad	
CIVE 4990	Elective	
CIVE 5221	Construction Project Control and Organization	
CIVE 5231	Alternative Project Delivery Systems in Construction	
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5300	Environmental Engineering Laboratory	
CIVE 5373	Transportation Systems: Analysis and Planning	
CIVE 5376	Traffic Engineering and Sustainable Urban Street Design	
CIVE 5522	Structural Analysis 2	
CIVE 5525	Prestressed Concrete Design	
CIVE 5536	Hydrologic Engineering	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation Policy)	
CIVE 5699	Special Topics in Civil Engineering (Structural Systems)	
CIVE 5699	Special Topics in Civil Engineering (Vibration-based Structural Health Monitoring)	
CIVE 5699	Special Topics in Civil Engineering (Groundwater and Contamination)	
CIVE 5699	Special Topics in Civil Engineering (Coastal Dynamics and Design Practice)	
SBSY 5100	Sustainable Design and Technologies in Construction	

SBSY 5200	Sustainable Engineering Systems for Buildings	
SBSY 5300	Information Systems for Integrated Project Delivery	

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement: 3

GE 1501	Cornerstone of Engineering 1	
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3 semester hours from the following course count toward the engineering requirement: 3

GE 1502	Cornerstone of Engineering 2	
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1 semester hour from the following course counts toward the engineering requirement: 1

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
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Professional Development

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CIVE 2000	Introduction to Engineering Co-op Education	1
CIVE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area: 1

GE 1501	Cornerstone of Engineering 1	
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Supporting Courses: Mathematics/Science

Complete 33 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
Complete one of the following:		4
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
Complete one of the following:		5
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	
Science Elective		
Complete one of the following:		4-5

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	
BIOL 1121 and BIOL 1122	Basic Microbiology and Lab for BIOL 1121	
BIOL 1141	Microbes and Society	
BIOL 1143	Biology and Society	
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	
ENVR 1110	Global Climate Change	
ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 1202	History of Earth and Life	
ENVR 2310	Earth Materials	
ENVR 3418	Geophysics	
ENVR 4515	Sustainable Development	
ENVR 5250	Geology and Land-Use Planning	
PHYS 1111	Astronomy	
PHYS 2303	Modern Physics	
PHYS 2305	Thermodynamics and Statistical Mechanics	
PHYS 3601	Classical Dynamics	
PHYS 4623	Medical Physics	
PHYS 5111	Astrophysics and Cosmology	

Supplemental Credit

3 semester hours from the following course count toward the mathematics/science requirement: 3

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
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1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1502	Cornerstone of Engineering 2	
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Supporting Course

Code	Title	Hours
Economics		
ECON 1115 or ECON 1116	Principles of Macroeconomics or Principles of Microeconomics	4

Writing Requirements and NUPath

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4

NUPath Requirements through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete six academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		24

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

134 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 2321 (FQ)	4	General Elective	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH134 Calculus 1-4 SH)		PHYS 1151 (ND)	3	General Elective	4		
MATH 1342 (FQ)	4	PHYS 1152 (AD)	1				
CHEM 1151	4	PHYS 1153	1				
CHEM 1153	0	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General Elective	4				
GE 1000	1						
GE 1501	4						
		21	17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	CIVE 2000	1	CIVE 2324	4	Co-op	0
ECON 1115 (or 1116)	4	CIVE 2260	4	General Elective	4		
CIVE 2221	4	CIVE 2261 (AD)	1				
CIVE 2222	0	CIVE 2320	4				
CIVE 2334	4	CIVE 2321	0				
		GE 3300	4				
		General Elective	4				
		16	18		8		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 2331	4	Science Elective	4	Co-op	0
ENGW 3302	4	CIVE 2340	4	Technical Elective	3		

Students will need to take Advanced Writing in the Professions online during this co-op	CIVE 2341	1		
	Project Elective (WI)	4		
	Technical Elective	4		
		4	17	7
Year 4				
Fall	Hours	Spring	Hours	Hours
Co-op	0	CIVE 3000	1	
		CIVE 3464	4	
		Technical Elective	4	
		General Elective	4	
		Senior Design Project (EI, WI, CE)	5	
		0	18	

Total Hours: 134

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 2321 (FQ)	4	General Elective	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH134 Calculus 1-4 SH)		PHYS 1151 (ND)	3	General Elective	4		
MATH 1342 (FQ)	4	PHYS 1152 (AD)	1				
CHEM 1151	4	PHYS 1153	1				
CHEM 1153	0	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General Elective	4				
GE 1501	4						
GE 1000	1						
		21	17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	4	Co-op	4	General Elective	4
CIVE 2000	1					General Elective	4

CIVE 2221	4			
CIVE 2222	0			
CIVE 2260	4			
CIVE 2261 (AD)	1			
CIVE 2334	4			
		18	0	0
				8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CIVE 2320	4	ENGW 3302	4	Co-op		CIVE 2340	4
CIVE 2321	0	Students will need to take Advanced Writing in the Profession online during this co-op				CIVE 2341	1
CIVE 2331	4	Co-op				Technical Elective	3
ECON 1115 (or 1116)	4						
GE 3300	4						
		16		4		0	
							8

Year 4

Fall	Hours	Spring	Hours
CIVE 2324	4	Senior Design Project (EI, WI, CE)	5
CIVE 3000	1	Technical Elective	4
CIVE 3464	4	Technical Elective	4
Project Elective (WI)	4	General Elective	4
Science Elective	4		
		17	17

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
ENGW 1111 (WF)	4	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General Elective	4				
		17	17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	MATH 2341	4	Vacation	0	Co-op	0
CIVE 2221	4	CIVE 2000	1				
CIVE 2222	0	CIVE 2260	4				
CIVE 2334	4	CIVE 2261 (AD)	1				
ECON 1115 or 1116 (AD, SI)	4	CIVE 2320	4				
		GE 3300	4				
		CIVE 2321	0				
		16		18		0	
							0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 2331	4	CIVE 2324	4	Co-op	0
		CIVE 2340	4	General Elective	4		
		CIVE 2341	1				
		Science Elective	4				
		Technical Elective	4				
		0		17		8	
							0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 3000	1	General Elective	4	Co-op	0
		CIVE 3464	4	General Elective	4		
		ENGW 3302 (WD)	4				
		Technical Elective	3				
		Project Elective (WI)	4				
		0		16		8	
							0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Senior Design Project (EI, WI, CE)	5
		General Elective	4
		General Elective	4
		Technical Elective	4
		0	17

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
ENGW 1111 (WF)	4	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General Elective	4				
	17		17		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	Co-op	0	Co-op	0	Vacation	0
CIVE 2000	1						
CIVE 2221	4						
CIVE 2222	0						
CIVE 2260	4						
CIVE 2261 (AD)	1						
CIVE 2334	4						
	18		0		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115 or 1116 (AD, SI)	4	Co-op	0	Co-op	0	MATH 2341	4
CIVE 2320	4					CIVE 2340	4
CIVE 2321	0					CIVE 2341	1
CIVE 2331	4						
GE 3300	4						
	16		0		0		9
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CIVE 2324	4	Co-op	0	Co-op	0	General elective	4
CIVE 3000	1					General elective	4
ENGW 3302 (WD)	4						
Science Elective	4						
Technical Elective	3						
	16		0		0		8
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CIVE 3464	4	Senior Design Project (EI, WI, CE)	5				

Project Elective (WI)	4	Technical Elective	4
General Elective	4	General Elective	4
Technical Elective	4	General Elective	4
	16		17

Total Hours: 134

Environmental Engineering, BSEnvE

Throughout the world, environmental engineers play a key role in defining the future of sustainable cities and communities. Creating innovations and designing systems that ensure clean and healthy environments are some of the greatest collective challenges of our time. Revolutionary strategies and designs are needed to create symbiosis between our natural and manmade environments.

Using new and advanced technologies, environmental engineers must address the world's growing challenges, including engineering sustainable strategies coupled with the development of devices and tools to better predict and address environmental needs to provide clean environments and planning green infrastructure in conjunction with the natural environment for a changing planet.

With a solid foundation in engineering, chemical, biological, and ecological principles, Northeastern's environmental engineering students learn how to tackle interconnected challenges as they relate to water, energy, air quality, and related fields. Understanding these complex interactions, particularly as they impact our built and natural environments, is embodied in our program through a holistic educational approach.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in major (CIVE) courses

Engineering

Complete 63 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CIVE 2221 and CIVE 2222	Statics and Strength of Materials and Recitation for CIVE 2221	4
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	5
CIVE 2331	Fluid Mechanics	4

CIVE 2334	Environmental Engineering 1	4
CIVE 3435	Environmental Pollution Fate and Transport	4
CIVE 4534 and CIVE 4535	Environmental Engineering 2 and Lab for CIVE 4534	4
CIVE 4765	Senior Design Project—Environmental	5
CIVE 5300	Environmental Engineering Laboratory	4
GE 3300	Energy Systems: Science, Technology, and Sustainability	4

Environmental Engineering Technical Electives

Complete 12 semester hours from the following: 12

CIVE 4540	Resource Recovery and Waste Treatment Technologies Abroad	
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5536	Hydrologic Engineering	
CIVE 5699	Special Topics in Civil Engineering (Groundwater and Contamination)	
CIVE 5699	Special Topics in Civil Engineering (Coastal Dynamic and Design Practice)	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	

Supplemental Credit

1 semester hour from the following course counts toward the engineering requirement: 1

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
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3 semester hours from the following course count toward the engineering requirement: 3

CIVE 2335	Environmental Engineering Chemistry	
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3 semester hours from the following course count toward the engineering requirement: 3

CIVE 3430	Engineering Microbiology and Ecology	
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3 semester hours from the following course count toward the engineering requirement: 3

GE 1501	Cornerstone of Engineering 1	
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3 semester hours from the following course count toward the engineering requirement: 3

GE 1502	Cornerstone of Engineering 2	
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Professional Development

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CIVE 2000	Introduction to Engineering Co-op Education	1
CIVE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area: 1

GE 1501	Cornerstone of Engineering 1	
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Supporting Courses: Mathematics/Science

Complete 35 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Science Elective (Earth)

Complete one of the following: 4-5

ENVR 1110	Global Climate Change	
ENVR 1112	Environmental Geology	
ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 1202	History of Earth and Life	
ENVR 2310	Earth Materials	
ENVR 3125	Global Oceanic Change	

Supplemental Credit

3 semester hours from the following course count toward the mathematics/science requirement: 3

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
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1 semester hour from the following course counts toward the mathematics/science requirement: 1

CIVE 2335	Environmental Engineering Chemistry	
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1 semester hour from the following course counts toward the mathematics/science requirement: 1

CIVE 3430	Engineering Microbiology and Ecology	
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1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1502	Cornerstone of Engineering 2	
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Writing Requirement and NUPATH Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4

NUPATH Requirements through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete six academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		24

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

134 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341	4	MATH 2321 (FQ)	4	General elective	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH134 – Calculus 1–4 SH)		PHYS 1151 (ND)	3	General elective	4		
MATH 1342 (FQ)	4	PHYS 1152 (AD)	1				
CHEM 1151	4	PHYS 1153	1				
CHEM 1153	0	GE 1502 (ER)	4				
GE 1000	1	General elective	4				
GE 1501	4						
ENGW 1111 (WF)	4						
		21	17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	CIVE 2000	1	General elective	4	Co-op	0
CIVE 2260	4	CIVE 2331	4	General elective	4		
CIVE 2261	1	CIVE 2335	4				
CIVE 2221	4	GE 3300	4				
CIVE 2222	0	Technical elective	4				
CIVE 2334	4						
		17	17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 3430	4	Science elective (Earth)	4	Co-op	0
		CIVE 3435	4	General elective	4	ENGW 3302 (WD)	4
		CIVE 3464	4			Students will need to take Advanced Writing in the Professions online during this co-op.	
		CIVE 4534	3				
		CIVE 4535	1				
		0	16		8		4

Year 4

Fall	Hours	Spring	Hours
Co-op	0	CIVE 3000	1
		CIVE 4765 (EI, WI, CE)	5
		CIVE 5300	4
		Technical elective	4
		Technical elective	4
		0	18

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17	17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	MATH 2341	4	Vacation	0	Co-op	0
CIVE 2221	4	CIVE 2000	1				
CIVE 2222	0	CIVE 2331	4				
CIVE 2260	4	CIVE 2335	4				
CIVE 2261 (AD)	1	GE 3300	4				

CIVE 2334		4					
	17		17		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 3430	4	General elective	4	Co-op	0
		CIVE 3435	4	General elective	4		
		Technical elective	4				
		Science elective (Earth)	4				
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CIVE 3000	1	General elective	4	Co-op	0
		CIVE 3464	4	General elective	4		
		CIVE 4534	3				
		CIVE 4535	1				
		ENGW 3302 (WD)	4				
		Technical elective	4				
	0		17		8		0
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	CIVE 4765 (EI, WI, CE)	5				
		CIVE 5300	4				
		Technical elective	4				
		General elective	4				
	0		17				

Total Hours: 134

Environmental Engineering and Health Science, BS

This intercollege combined major is designed for students who would like to explore their interest in the health sciences while earning the benefit of a Bachelor of Science degree in environmental engineering. The combined major reflects the respective departmental thrusts in environmental health and sustainable resource engineering to create awareness about the complex relationship between the environment and human health, prepare professionals in this growing area capable of providing engineering solutions to current and emerging topics related to environmental engineering and health sciences, and maintain healthy environmental systems by applying and developing techniques to reduce exposure to health hazards. This program combines the content of two majors to allow students to learn the breadth and depth of the convergence between public health and environmental engineering.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in major (CIVE) courses

Engineering

Complete 65 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CIVE 2221 and CIVE 2222	Statics and Strength of Materials and Recitation for CIVE 2221	4
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	5
CIVE 2331	Fluid Mechanics	4
CIVE 2334	Environmental Engineering 1	4
CIVE 2335	Environmental Engineering Chemistry	4
CIVE 3430	Engineering Microbiology and Ecology	4
CIVE 3435	Environmental Pollution Fate and Transport	4
CIVE 4534 and CIVE 4535	Environmental Engineering 2 and Lab for CIVE 4534	4
CIVE 4765	Senior Design Project—Environmental	5
CIVE 5300	Environmental Engineering Laboratory	4
GE 3300	Energy Systems: Science, Technology, and Sustainability	4

Environmental Engineering Technical Electives

Complete 12 semester hours from the following:		12
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5536	Hydrologic Engineering	
CIVE 5699	Special Topics in Civil Engineering (Groundwater and Contamination)	
CIVE 5699	Special Topics in Civil Engineering (Coastal Dynamic and Design Practice)	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	

Supplemental Credit

1 semester hour from the following course counts toward the engineering requirement:

1

CIVE 3464	Probability and Engineering Economy for Civil Engineering	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CIVE 2000	Introduction to Engineering Co-op Education	1
CIVE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 33 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Science Elective (Earth)

Complete one of the following:		4-5
ENVR 1110	Global Climate Change	
ENVR 1112	Environmental Geology	
ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 1202	History of Earth and Life	
ENVR 2310	Earth Materials	
ENVR 3125	Global Oceanic Change	

Supplemental Credit

3 semester hours from the following course count toward the mathematics/science requirement:		3
CIVE 3464	Probability and Engineering Economy for Civil Engineering	
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Health Sciences Major Requirement

Code	Title	Hours
HLTH 5450	Healthcare Research	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 5214	Environmental Health	3
PHTH 1260	The American Healthcare System	4
PHTH 2210	Foundations of Biostatistics	4
PHTH 2350	Community and Public Health	4
PHTH 2414	Environmental Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4540	Health Education and Program Planning	4

Integrative Course

Code	Title	Hours
CIVE 4765	Senior Design Project—Environmental	5

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

145 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1241	4	MATH 1342	4	PHTH 1260	4	Vacation	
CHEM 1151 and CHEM 1153	4	GE 1502	4	MATH 2321	4		
GE 1501	4	PHYS 1151 and PHYS 1152 and PHYS 1153	5				
GE 1000	1	PHTH 2210	4				

ENGW 1111	4						
	17		17		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CIVE 2334	4	PHTH 2414	4	PHTH 2350	4	Co-op	
CIVE 2260 and CIVE 2261	5	CIVE 2000	1	MATH 2341	4		
CIVE 2221 and CIVE 2222	4	CIVE 2331	4				
PHTH 2515	4	CIVE 2335	4				
		CIVE 3430	4				
	17		17		8		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CIVE 3435	4	GE 3300	4	Co-op	
		Technical elective	4	Science elective	4		
		PHTH 4540	4				
		HLTH 5450	4				
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CIVE 3000	1	Vacation		Co-op	
		CIVE 3464	4			ENGW 3302	4
		Technical elective	4				
		CIVE 4534 and CIVE 4535	4				
		PHTH 4120	4				
	0		17		0		4
Year 5							
Fall	Hours	Spring	Hours				
Co-op		Technical elective	4				
		CIVE 5300	4				
		PHTH 5214	3				
		CIVE 4765	5				
	0		16				

Total Hours: 145

Architectural Engineering, Minor

Architectural engineering is a field of engineering that encompasses elements of civil engineering, mechanical engineering, architecture, and related fields to plan, design, and create buildings within the urban environment. It includes the architectural and structural design, mechanical systems design, computational controls and sensing, and sustainable engineering strategies.

The Department of Civil and Environmental Engineering recognizes the importance of interdisciplinary work and of exposing students to the great richness in a classroom of diverse students from multiple majors bringing their own perspectives. The prospect of engineering students in

architecture classes and vice versa stands to benefit all the students, whether or not they are enrolled in the minor.

The minor in architectural engineering opens opportunities for students across the university who are interested in a unique and multidisciplinary approach to the built environment. For engineering students, this minor offers an opportunity to work in the built environment and to better understand architecture, while for architecture students this is an opportunity to acquire the technical knowledge of a course of study in an engineering minor.

A total of 20 semester hours (SH) are required to complete this minor. Students will be required to complete 8 SH of required courses and 12 SH of approved elective courses from several colleges and departments at the university. Students interested in this minor must contact the civil engineering academic advisor in order to declare the minor.

- Audience: This minor in architectural engineering is designed for any major and is open to any undergraduate student at the university.
- Double count no more than two courses with any major or graduate degree requirement, other than general electives.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs and recitations courses where specified.

Required Courses

Code	Title	Hours
CIVE 2221 and CIVE 2222	Statics and Strength of Materials and Recitation for CIVE 2221	4
ARCH 5210 and ARCH 5211	Environmental Systems and Recitation for ARCH 5210	4

Electives

ARCHITECTURE ELECTIVES

Code	Title	Hours
Complete one of the following:		4
ARCH 2330 and ARCH 2331	Architecture, Modernity, and the City, 1800 to 1910 and Recitation for ARCH 2330	
ARCH 2340 and ARCH 2341	Architecture, Modernity, and the City, 1910 to 1980 and Recitation for ARCH 2340	
ARCH 5220	Integrated Building Systems	
LARC 2230	Site Materials and Methods	
LARC 2240	Sustainable Site Construction and Detailing	

ENGINEERING ELECTIVES

Code	Title	Hours
Complete one or two of the following:		8
CIVE 2320 and CIVE 2321	Structural Analysis 1 and Recitation for CIVE 2320	
CIVE 2324	Reinforced Concrete Design	
CIVE 3425	Steel Design	
CIVE 5522	Structural Analysis 2	
CIVE 5699	Special Topics in Civil Engineering (Structural Systems)	

CIVE 5699	Special Topics in Civil Engineering (Vibration-based Structural Health Monitoring)
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)
SBSY 5100	Sustainable Design and Technologies in Construction
SBSY 5200	Sustainable Engineering Systems for Buildings
SBSY 5300	Information Systems for Integrated Project Delivery

If only one course was taken above, complete one course from the following:

GE 3300	Energy Systems: Science, Technology, and Sustainability
CIVE 2340 and CIVE 2341	Soil Mechanics and Lab for CIVE 2340
CIVE 4542	Foundation Engineering
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure

GPA Requirement

2.000 GPA required in the minor

Civil Engineering, Minor

The minor in civil engineering opens opportunities for students across the university who are interested in gaining knowledge in urban engineering through the core disciplines within the Department of Civil and Environmental Engineering.

A total of 16 semester hours are required to complete this minor. Students interested in this minor must contact the civil and environmental engineering academic advisor in order to declare the minor. This minor is not open to civil engineering or environmental engineering majors.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs and recitations courses where specified.

Required Courses

Code	Title	Hours
Complete four of the following:		16
CIVE 2221	Statics and Strength of Materials	
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	
CIVE 2320	Structural Analysis 1	
CIVE 2324	Reinforced Concrete Design	
CIVE 2331	Fluid Mechanics	
CIVE 2334	Environmental Engineering 1	
CIVE 2335	Environmental Engineering Chemistry	
CIVE 2340 and CIVE 2341	Soil Mechanics and Lab for CIVE 2340	
CIVE 3425	Steel Design	
CIVE 3430	Engineering Microbiology and Ecology	
CIVE 3435	Environmental Pollution Fate and Transport	

CIVE 3464	Probability and Engineering Economy for Civil Engineering
CIVE 4534	Environmental Engineering 2
CIVE 4540	Resource Recovery and Waste Treatment Technologies Abroad
CIVE 4542	Foundation Engineering
CIVE 4554	Highway Engineering
CIVE 4566	Design for Sustainable Transportation: Netherlands
CIVE 4575	Construction Management
CIVE 4777	Climate Hazards and Resilient Cities Abroad
CIVE 5271	Solid and Hazardous Waste Management
CIVE 5221 and CIVE 5231	Construction Project Control and Organization and Alternative Project Delivery Systems in Construction
CIVE 5250	Organic Pollutants in the Environment
CIVE 5260	Environmental Fluid Mechanics
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure
CIVE 5280	Remote Sensing of the Environment
CIVE 5300	Environmental Engineering Laboratory
CIVE 5373	Transportation Systems: Analysis and Planning
CIVE 5376	Traffic Engineering and Sustainable Urban Street Design
CIVE 5522	Structural Analysis 2
CIVE 5536	Hydrologic Engineering
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)
CIVE 5699	Special Topics in Civil Engineering (Groundwater and Contamination)
CIVE 5699	Special Topics in Civil Engineering (Coastal Dynamics and Design Practice)
CIVE 5699	Special Topics in Civil Engineering (Structural Systems)
CIVE 5699	Special Topics in Civil Engineering (Vibration-based Structural Health Monitoring)
SBSY 5100	Sustainable Design and Technologies in Construction
SBSY 5200	Sustainable Engineering Systems for Buildings
SBSY 5300	Information Systems for Integrated Project Delivery

GPA Requirement

2.000 GPA required in the minor

Electrical and Computer Engineering

Website (<http://www.ece.neu.edu>)

Srinivas Tadigadapa, PhD
Professor and Chair

Waleed Meleis, PhD
Associate Professor and Associate Chair

Stefano Basagni, PhD
Associate Professor and Undergraduate Studies Committee Co-Chair

Vinay Ingle, PhD
Associate Professor and Undergraduate Studies Committee Co-Chair

409 Dana Research Center
617.373.7529
617.373.4431 (fax)

Electrical and computer engineering (ECE) is a discipline that prepares graduates to solve problems across a diverse array of industries. Course work is drawn from a curriculum that includes cutting-edge ECE technologies: embedded systems and internet of things, robotics and cyber-human systems, networking (mobile/wireless as well as the internet of the future), and big data analytics and machine learning. Northeastern's historic strengths in ECE include communications and digital signal processing, power and control systems, power electronics, RF/microwave magnetic materials, device technologies, computer engineering, networking, and robotics. The Department of Electrical and Computer Engineering is deeply committed to training and educating the next generation of electrical and computer engineers through Northeastern's experiential learning model and comprehensive pedagogy. BS, MS, and PhD degrees are offered in both electrical and computer engineering.

Mission of the Department

The primary educational missions of the Department of Electrical and Computer Engineering are to educate undergraduate students so they have the opportunity to obtain successful careers in electrical and computer engineering and related disciplines and pursue advanced study, such as graduate study in engineering or related disciplines, and to educate graduate students so they can make meaningful contributions to the research and industrial communities.

Overview of Programs Offered

Please see the programs tab (p. 398) for a list of the department's academic programs.

Successful engineers need to organize and adapt information to solve problems. They also must work effectively in teams and communicate well. Therefore, the goal of the electrical engineering and computer engineering programs is to help students develop these skills and provide the appropriate technical background for a successful career. The program educational objectives of the Bachelor of Science programs are that graduates should:

1. Obtain successful careers in electrical and computer engineering and related disciplines through substantial technical contributions, continued employment, professional recognition, advancement in responsibilities, a professional network, and personal satisfaction.
2. Pursue advanced study such as graduate study in engineering or related disciplines, if desired.

The curricula are continuously assessed to ensure that graduates can achieve these goals and go on to succeed as professional electrical or computer engineers. The Bachelor of Science programs allow students sufficient flexibility within the standard eight academic semesters to earn a minor in nearly any department in the university. Typical minors might include physics, math, computer science, or business, but students might also organize their course of study to earn a minor in economics, English, or music.

The academic program is supported by extensive laboratory facilities for study and experimentation in computing, circuit analysis, electronics, digital systems, microwaves, control systems, semiconductor processing, very large-scale integration (VLSI) design, and digital signal processing. Students have access to state-of-the-art computing facilities, including numerous Linux and Windows-based workstations. Many courses are taught in one of the four computer-based teaching classrooms. Two introductory electrical and computer engineering courses meet in integrated lab-classrooms where students and professors, assisted by undergraduate and graduate teaching assistants, work together on both theoretical and practical aspects of a wide range of signal processing and computing systems.

Other Programmatic Features

More than 90 percent of department undergraduates take advantage of the cooperative education program. During the cooperative work phase of the program, the students' levels of responsibility grow as they gain theoretical and technical knowledge through academic work. A sophomore might begin cooperative work experience as an engineering assistant and progress by the senior year to a position with responsibilities similar to those of entry-level engineers.

The department also offers significant research opportunities throughout all fields of electrical and computer engineering, including participating in research centers based in our department and college.

A senior-year design course caps the education by drawing on everything learned previously. Teams of students propose, design, and build a functioning electrical or computer engineering system—just as they might in actual practice.

Programs

Bachelor of Science in Computer Engineering (BSCompE)

- Computer Engineering (p. 399)
- Computer Engineering and Physics (p. 402)
- Computer Engineering and Computer Science (p. 290)

Bachelor of Science in Electrical Engineering (BSEE)

- Electrical Engineering (p. 408)
- Electrical Engineering and Physics (p. 411)
- Electrical Engineering and Music with Concentration in Music Technology (p. 414)

Combined Major (BSEE or BSCompE)

- Electrical and Computer Engineering (p. 415)

Minors

- Biomedical Engineering (p. 418)
- Computer Engineering (p. 419)
- Computational Data Analytics (p. 419)
- Electrical Engineering (p. 420)
- Robotics (p. 420)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 433)

Computer Engineering, BSCompE

The use of computer technology is exploding, driven by applications in wireless communications, multimedia, portable devices, and internet computing. At the core of these technological advances are computer engineers who research, design, and develop hardware and software. With a degree in computer engineering you might develop a full-featured multimedia phone, design the next-generation microprocessor, program computer-guided cameras to inspect nanomanufacturing facilities, or start your own software company.

The computer engineering major acquires a strong foundation in engineering principles and the physical sciences in addition to a powerful mix of theory and practice in hardware and software design. The core of the computer engineering curriculum comprises courses in computer organization and architecture, computer networks, computer-aided design, programming languages, optimization theory, and software design.

The BSCompE degree requires a sequence of core courses, technical electives, general electives, and electives in the arts and humanities and social sciences.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements and, if these are not fulfilled in engineering courses, should use general electives to do so.

Major GPA Requirement

2.000 minimum GPA required in EECE courses

Engineering

Complete 56 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Computer Engineering Fundamentals		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5

EECE 2540	Fundamentals of Networks	4
EECE 2560	Fundamentals of Engineering Algorithms	4

Electrical Engineering Fundamentals

If more than one electrical engineering fundamentals course is taken, it can count as a technical elective.

Complete one of the following: 4-5

EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	

Capstone Courses

EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

EECE Technical Electives

Two CS courses from the following approved list may be taken toward the EECE technical elective requirement.

Complete four of the following: 16

EECE 2750	Enabling Engineering	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
GE 4608	Nanotechnology in Engineering	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
EECE 2412 to EECE 2530		
EECE 3324 to EECE 4698		
EECE 5155 to EECE 5698		
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3500	Object-Oriented Design	
CS 4850	Building Game Engines	
CS 3540 to CS 3800		
CS 4100 to CS 4770		
IS 4200 to IS 4700		

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement: 3

GE 1501	Cornerstone of Engineering 1	
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3 semester hours from the following course count toward the engineering requirement: 3

GE 1502	Cornerstone of Engineering 2	
---------	------------------------------	--

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:
 GE 1501 Cornerstone of Engineering 1

Supporting Courses: Mathematics/Science Requirement

Complete 35 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Supplemental Credit
 1 semester hour from the following course counts toward the mathematics/science requirement:
 GE 1502 Cornerstone of Engineering 2

Writing Requirements

Code	Title	Hours
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete seven academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		28

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	General elective	4	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17			17	8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	EECE 2000	1	MATH 3081	4	Co-op	0
PHYS 1155 (ND)	3	EECE 2150	5	General elective	4		
PHYS 1156 (AD)	1	CS 1800 (FQ)	4				
PHYS 1157	1	CS 1802	1				
EECE 2160	4	CE fundamentals	4-5				
General elective	4	CE fundamentals	4-5				
		17			19-21	8	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3302 (to be taken online)	4	CE fundamentals	4-5	EECE 4790	4	Co-op	0
Co-op	0	EE fundamentals	4-5	EECE technical elective	4		
		EECE 3000	1				
		General elective	4				
		EECE technical elective	4				
		4			17-19	8	0
Year 4							
Fall	Hours	Spring	Hours				
Co-op	0	EECE 4792	4				
		EECE technical elective	4				
		EECE technical elective	4				
		General elective	4				
		0			16		

Total Hours: 131-135

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	General elective	4	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17	17		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	MATH 3081	4
PHYS 1155 (ND)	3					General elective	4
PHYS 1156 (AD)	1						
PHYS 1157	1						
EECE 2160	4						
EECE 2000	1						
General elective	4						
		18	0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 2150	5	ENGW 3302 (to be taken online)	4	Co-op	0	EECE 4790	4
EECE 3000	1	Co-op	0			EECE technical elective	4
CS 1800	4						
CS 1802	1						
CE fundamentals	4-5						
General elective	4						
		19-20	4		0		8

Year 4			
Fall	Hours	Spring	Hours
CE fundamentals	4-5	EECE 4792	4
CE fundamentals	4-5	EECE technical elective	4
EE fundamentals	4-5	EECE technical elective	4

EECE technical elective	4	General elective	4
		16-19	16

Total Hours: 131-135

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17	17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	EECE 2000	1	Vacation	0	Co-op	0
PHYS 1155 (ND)	3	EECE 2150	5				
PHYS 1156 (AD)	1	CS 1800 (FQ)	4				
PHYS 1157	1	CS 1802	1				
EECE 2160	4	General elective	4				
General elective	4	CE fundamentals	4				
		17	19		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CE fundamentals	5	ENGW 3302 (WD)	4	Co-op	0
		CE fundamentals	4	General elective	4		
		EE fundamentals	4				
		General elective	4				
		0	17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3000	1	EECE 4790 (EI, WI, CE)	4	Co-op	0
		MATH 3081 (AD)	4	EECE technical elective	4		
		EECE technical elective	4				
		EECE technical elective	4				

	General elective	4			
		0	17	8	0
Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	EECE 4792 (EI, WI, CE)	4		
		EECE technical elective	4		
		General elective	4		
	0		12		

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op		Co-op		Vacation	
EECE 2000	1						
EECE 2160	4						
PHYS 1155 (ND)	3						
PHYS 1156 (AD)	1						
PHYS 1157	1						
General elective	4						
	18		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 (FQ)	4	Co-op		Co-op		ENGW 3302 (WD)	4
CS 1802	1					General elective	4
EECE 2150	5						
CE fundamentals	4						
General elective	4						
	18		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 3000	1	Co-op		Co-op		EECE 4790 (EI, WI, CE)	4
CE fundamentals	4					EECE technical elective	4
EE fundamentals	4						
CE fundamentals	5						
General elective	4						
	18		0		0		8

Year 5			
Fall	Hours	Spring	Hours
EECE 4792 (EI, WI, CE)	4	EECE technical elective	4
MATH 3081 (AD)	4	EECE technical elective	4
EECE technical elective	4	General elective	4
General elective	4		
	16		12

Total Hours: 132

Computer Engineering and Physics, BSCompE

This intercollege dual major serves students who would like to explore their interest in physics while earning the benefit of an accredited Bachelor of Science degree in engineering. The dual major combines a major in physics from the Department of Physics in the College of Arts and Sciences with the Bachelor of Science in Computer Engineering degree from the Department of Electrical and Computer Engineering.

Because of the large body of shared knowledge between computer engineering and physics, an integrated dual major between these two disciplines is a logical course of study and can be accomplished within a student's usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have studied both the physical fundamentals and computer systems.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Physics as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in EECE courses

Engineering

Complete 48 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Computer Engineering Fundamentals		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5
EECE 2540	Fundamentals of Networks	4
EECE 2560	Fundamentals of Engineering Algorithms	4
Electrical Engineering Fundamentals		
If more than one electrical engineering fundamentals course is taken, it can count as a technical elective.		
Complete one of the following:		4
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
Technical Electives		
One CS course from the following approved list may be taken toward the EECE technical elective requirement:		8
EECE 2750	Enabling Engineering	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
EECE 2412 to EECE 2530		
EECE 3324 to EECE 4698		
EECE 5155 to EECE 5698		
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3500	Object-Oriented Design	
CS 4850	Building Game Engines	

CS 3540 to CS 3800

CS 4100 to CS 4770

IS 4200 to IS 4700

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement: 3

GE 1501 Cornerstone of Engineering 1

3 semester hours from the following course count toward the engineering requirement: 3

GE 1502 Cornerstone of Engineering 2

Mathematics/Science

Complete 63 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5115	Quantum Mechanics	4
Advanced Physics Elective		
Complete one of the following:		4
MATH 4606	Mathematical and Computational Methods for Physics	
PHYS 3600 to PHYS 7999		
Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Additional Required Courses		
One credit hour from the following course counts toward the engineering requirement:		1
GE 1501	Cornerstone of Engineering 1	

Integrative Requirement

The following course, which counts toward the engineering requirement above, is an integrative course:

Code	Title	Hours
EECE 4790	Electrical and Computer Engineering Capstone 1	4

Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements through general electives.

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1165 (ND)	4				

CHEM 1153	0	PHYS 1166 (AD)	1				
PHYS 1161 (ND)	4	GE 1502 (ER)	4				
PHYS 1162 (AD)	1						
GE 1000	1						
GE 1501	4						
ENGW 1111 (WF)	4						
		22	13	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	PHYS 2305 (ND)	4	Vacation	0	Co-op	0
MATH 2341	4	EECE 2000	1				
PHYS 2303 (ND)	4	EECE 2150	5				
EECE 2160	4	CE fundamentals	4				
		CS 1800 (FQ)	4				
		CS 1802	1				
		16	19	0	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 (ND)	4	PHYS 3600 (ND, AD< WI)	4	Co-op	0
		EE fundamentals	4	General elective	4		
		CE fundamentals	5				
		ENGW 3302 (WD)	4				
		0	17	8	0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 5115 (ND, FQ)	4	EECE 4790 (EI, WI, CE)	4	Co-op	0
		EECE 3000	1	EECE technical elective	4		
		CE fundamentals	4				
		MATH 3081 (AD)	4				
		General elective	4				
		0	17	8	0		

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		EECE technical elective	4

PHYS advanced elective	4
0	12

Total Hours: 132

Computer Engineering and Computer Science, BSCompE

This intercollege dual major serves students who are interested in both computer hardware and software, combining an accredited Bachelor of Science degree in engineering with the added benefits of depth in software principles found in a Bachelor of Science degree in computer science. This program provides a well-rounded computing education that includes engineering design principles, computational thinking, proper program design, and a solid background in mathematics and science. The degree is fully accredited as a Bachelor of Science in Computer Engineering and adds the computer science depth.

Because of the large body of shared knowledge between computer engineering and computer science, an integrated dual major between these two disciplines is a logical course of study and can be accomplished within a student's usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have a solid foundation in both computer hardware and software principles, and should be prepared for a wide range of career paths in the computing field or any related field that relies on the application of engineering or computing principles.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Computer and Information Science as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA in EECE courses

Engineering

Complete 48 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Computer Engineering Fundamentals		

EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5
EECE 2540	Fundamentals of Networks	4
CS 3000	Algorithms and Data	4

Electrical Engineering Fundamentals

Complete one of the following:		4
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	

Capstone Courses

EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

EECE Technical Electives

Complete two of the following:		8
EECE 2750	Enabling Engineering	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
GE 4608	Nanotechnology in Engineering	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
EECE 2412 to EECE 2530		
EECE 3324 to EECE 4698		
EECE 5155 to EECE 5698		

CS/IS Technical Electives

Complete two of the following:		8
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3540	Game Programming	
CS 3700	Networks and Distributed Systems	
CS 3740	Systems Security	
CS 3800	Theory of Computation	
CS 4850	Building Game Engines	
CS 4100 to CS 4410		
CS 4510 to CS 4650		
CS 4740 to CS 4760		
IS 4200 to IS 4700		

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Computer Science Requirements

Code	Title	Hours
Computer Science Introductory Courses		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5

CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Upper-Level Courses

CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:	1
GE 1501	Cornerstone of Engineering 1

Integrative Courses

The following courses are taken in the major and count toward the integrative requirement:

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 3081	Probability and Statistics	4
CS 1800	Discrete Structures	4
PHYS 1151 and PHYS 1152	Physics for Engineering 1 and Lab for PHYS 1151	4
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

Supporting Courses: Mathematics/Science

Complete 35 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5
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Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement:	1
GE 1502	Cornerstone of Engineering 2

Writing Requirements and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		8

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0		
CHEM 1151	4	PHYS 1151 (ND)	3						
CHEM 1153	0	PHYS 1152 (AD)	1						
GE 1000	1	PHYS 1153	1						
GE 1501	4	GE 1502 (ER)	4						
ENGW 1111 (WF)	4	General elective	4						
		17			17			0	0
Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
MATH 2341	4	EECE 2160	4	Vacation	0	Co-op	0		

PHYS 1155 (ND)	3	CS 2510 (ND, AD)	4
PHYS 1156 (AD)	1	CS 2511	1
PHYS 1157	1	CS 2800	4
CS 2500 (ND, FQ)	4	CS 2801	1
CS 2501	1	EECE 2000	1
CS 1800 (FQ)	4	General elective	4
CS 1802	1		
	19		19
			0
			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 2150	5	ENGW 3302 (WD)	4	Co-op	0
		CE fundamental course	4	CS 3500 (ND, AD)	4		
		CE fundamental course	5				
		CS 3650	4				
	0		18		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3000	1	EECE 4790 (EI, WI, CE)	4	Co-op	0
		CE fundamental course	4	CS 3000	4		
		EE fundamental course	4				
		MATH 3081 (AD)	4				
		CCIS Technical Elective	4				
	0		17		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		EECE technical elective	4
		EECE technical elective	4
		CS 4500 (WI)	4
		CS 4501	0
	0		16

Total Hours: 139

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	Vacation	0
PHYS 1155 (ND)	3						
PHYS 1156 (AD)	1						
PHYS 1157	1						
CS 2500 (ND, FQ)	4						
CS 2501	1						
CS 1800 (FQ)	4						
CS 1802	1						
EECE 2000	1						
	20		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 2150	5	Co-op	0	Co-op	0	ENGW 3302 (WD)	4
EECE 2160	4					MATH 3081 (AD)	4
CS 2510 (ND, AD)	4						
CS 2511	1						
CS 2800	4						
CS 2801	1						
	19		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 3000	1	Co-op	0	Co-op	0	EECE 4790 (EI, WI, CE)	4
CE fundamental course	4					CS 3000	4
CE fundamental course	5						
CS 3500 (ND, AD)	4						
CS 3650	4						
	18		0		0		8

Year 5

Fall	Hours	Spring	Hours
EECE 4792 (EI, WI, CE)	4	EECE technical elective	4
CE fundamental course	4	General elective	4
EE fundamental course	4	EECE technical elective	4
CCIS Technical Elective	4	CS 4500 (WI)	4
		CS 4501	0
	16		16

Total Hours: 139

Electrical Engineering, BSEE

The components of the Information Age—global communication systems; computers and computer chips, and the software that runs them; as well as pacemakers, magnetic resonance imaging, and interplanetary space missions—are possible because of the efforts of electrical engineers. Today, electrical engineers are developing concepts and working to translate these ideas into the next generation of products, from computers and safe, energy-efficient vehicles, to radar that can detect unexploded land mines from the air, to microrobots that diagnose disease from inside the body.

Many electrical engineers work in the traditional areas of communications, computation, and control and components required to realize such systems. They are involved in design and product development, testing and quality control, sales and marketing, and manufacturing. Others use their problem-solving skills in diverse areas such as bioengineering, healthcare, electronic music, meteorology, and experimental psychology. Some graduates draw on their electrical engineering backgrounds to launch successful careers as physicians, financial analysts, attorneys, and entrepreneurs.

The BSEE degree requires a sequence of core courses and advanced study in one or more technical elective areas: electronic circuits and devices; signals and systems; fields, waves, and optics; power engineering; or computer engineering. General electives and electives in the arts and humanities and social sciences are also required.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

Minimum 2.000 GPA required in EECE courses

Engineering

Complete 59 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Electrical Engineering Fundamentals		
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	5
EECE 2520	Fundamentals of Linear Systems	4
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	5
Computer Engineering Fundamentals		
If more than one computer engineering fundamentals course is taken, it can count as a technical elective.		
Complete one of the following:		4-5
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 2540	Fundamentals of Networks	
EECE 2560	Fundamentals of Engineering Algorithms	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
Electrical Engineering Technical Electives		
Complete four of the following:		16
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
EECE 2540 to EECE 2750		
EECE 3324 to EECE 3410		
EECE 4512 to EECE 4698		
EECE 5155 to EECE 5698		
Supplemental Credit		
2 semester hours from the following course count toward the engineering requirement:		2
EECE 3468	Noise and Stochastic Processes	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3

GE 1502	Cornerstone of Engineering 2	
Total Hours		59-60

Professional Development

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 33 semester hours in mathematics and science as indicated below:

Code	Title	Hours
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Supplemental Credit

2 semester hours from the following course count toward the mathematics/science requirement:		2
EECE 3468	Noise and Stochastic Processes	
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through Open Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete seven academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		28

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	General elective	4	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
		17			17	8	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	MATH 2321	4	General elective	4	Co-op	0
PHYS 1155 (ND)	3	EECE 2000	1	General elective	4		
PHYS 1156 (AD)	1	EECE 2160	4				
PHYS 1157	1	EE fundamentals	4-5				
EECE 2150	5	EE fundamentals	4-5				
General elective	4						
		18			17-19	8	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3302 (to be taken online)	4	EECE 3000	1	EECE technical elective	4	Co-op	0
Co-op	0	EE fundamentals	4-5	EECE 4790	4		

CE fundamentals	4-5		
EECE 3468	4		
EECE technical elective	4		
	4	17-19	8

Year 4

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792	4
		EECE technical elective	4
		EECE technical elective	4
		General elective	4
	0		16

Total Hours: 130-134

Four Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	General elective	4	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3	General elective	4		
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	General elective	4
PHYS 1155 (ND)	3					General elective	4
PHYS 1156 (AD)	1						
PHYS 1157	1						
EECE 2150	5						
EECE 2000	1						
General elective	4						
	19		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	ENGW 3302 (to be taken online)	4	Co-op	0	EECE technical elective	4
EECE 2160	4	Co-op	0			EECE 4790	4
EE fundamentals	4-5						

EE fundamentals	4-5		
EECE 3000	1		
	17-19	4	0

Year 4

Fall	Hours	Spring	Hours
EE fundamentals	4-5	EECE 4792	4
CE fundamentals	4-5	EECE technical elective	4
EECE 3468	4	EECE technical elective	4
EECE technical elective	4	General elective	4
	16-18		16

Total Hours: 130-134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1155 (ND)	3	MATH 2321 (FQ)	4	Vacation	0	Co-op	0
PHYS 1156 (AD)	1	EECE 2160	4				
PHYS 1157	1	EE fundamentals course	4				
EECE 2150	5	EECE 2000	1				
MATH 2341	4	General elective	4				
General elective	4						
	18		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EE fundamentals course	5	ENGW 3302 (WD)	4	Co-op	0
		EE fundamentals course	5	General elective	4		

		CE fundamentals course	4			
		General elective	4			
	0		18		8	0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	EECE 3468	4	EECE technical elective	4	Co-op
		General elective	4	EECE 4790 (EI, WI, CE)	4	
		General elective	4			
		EECE 3000	1			
		EECE technical elective	4			
	0		17		8	0
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	EECE 4792 (EI, WI, CE)	4			
		EECE technical elective	4			
		EECE technical elective	4			
	0		12			

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation
CHEM 1151	4	PHYS 1151 (ND)	3			
CHEM 1153	0	PHYS 1152 (AD)	1			
GE 1000	1	PHYS 1153	1			
GE 1501	4	GE 1502 (ER)	4			
ENGW 1111 (WF)	4	General elective	4			
	17		17		0	0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 1155 (ND)	3	Co-op	0	Co-op	0	Vacation
PHYS 1156 (AD)	1					
PHYS 1157	1					
MATH 2341	4					
EECE 2150	5					
EECE 2000	1					

General elective	4			
	19	0	0	0

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
MATH 2321 (FQ)	4	Co-op	0	Co-op	0
EECE 2160	4				General elective
EE fundamentals course	4				ENGW 3302 (WD)
General elective	4				
	16		0		0

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
EECE 3000	1	Co-op	0	Co-op	0
EE fundamentals course	5				EECE 4790 (EI, WI, CE)
General elective	4				EECE technical elective
EE fundamentals course	5				
CE fundamentals course	4				
	19		0		0

Year 5					
Fall	Hours	Spring	Hours		
EECE 3468	4	EECE technical elective	4		
EECE technical elective	4	General elective	4		
EECE 4792 (EI, WI, CE)	4	EECE technical elective	4		
General elective	4				
	16		12		

Total Hours: 132

Electrical Engineering and Physics, BSEE

This intercollege combined major serves students who would like to explore their interest in physics while earning the benefit of an accredited Bachelor of Science degree in engineering. The major combines a major in physics from the Department of Physics in the College of Science with the Bachelor of Science in Electrical Engineering degree from the Department of Electrical and Computer Engineering.

Because of the large body of shared knowledge between electrical engineering and physics, a combined major between these two

disciplines is a logical course of study and can be accomplished within a student's usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have studied both the physical fundamentals and the applications of electronic devices and systems. The program is a particularly appropriate course of study for students who wish to pursue a career in solid-state devices, microelectromechanical systems, or nanotechnology.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Physics as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in EECE courses

Engineering

Complete 51 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Electrical Engineering Fundamentals		
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	5
EECE 2520	Fundamentals of Linear Systems	4
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	5
Computer Engineering Fundamentals		
If more than one computer engineering fundamentals course is taken, it can count as a technical elective.		
Complete one of the following:		4-5
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 2540	Fundamentals of Networks	
EECE 2560	Fundamentals of Engineering Algorithms	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
EECE Technical Electives		

Complete two of the following:		8-9
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
EECE 2540 to EECE 2750		
EECE 3324 to EECE 3410		
EECE 4512 to EECE 4698		
EECE 5155 to EECE 5698		

Supplemental Credit

2 semester hours from the following course count toward the engineering requirement:		2
EECE 3468	Noise and Stochastic Processes	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Mathematics/Science

Complete 57 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
Complete one of the following:		5
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	

Complete one of the following:	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155

PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165
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PHYS 2303	Modern Physics	4
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PHYS 2305	Thermodynamics and Statistical Mechanics	4
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PHYS 3600	Advanced Physics Laboratory	4
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PHYS 3602	Electricity and Magnetism	4
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PHYS 5115	Quantum Mechanics	4
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Advanced Physics Elective

Complete one of the following:	4
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MATH 4606	Mathematical and Computational Methods for Physics
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PHYS 3600 to PHYS 7999

Supplemental Credit

2 semester hours from the following course count toward the mathematics/science requirement:	2
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EECE 3468	Noise and Stochastic Processes
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1 semester hour from the following course counts toward the mathematics/science requirement:	1
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GE 1502	Cornerstone of Engineering 2
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Writing Requirement and NUPath Courses

Code	Title	Hours
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Writing

A grade of C or higher is required:

ENGW 1111	First-Year Writing	4
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ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
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NUPath Requirements through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete three academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		12

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1165 (ND)	4				
CHEM 1153	0	PHYS 1166 (AD)	1				
PHYS 1161 (ND)	4	GE 1502 (ER)	4				
PHYS 1162 (AD)	1						
GE 1000	1						
GE 1501	4						
ENGW 1111 (WF)	4						
		22		13		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	PHYS 2305 (ND)	4	Vacation	0	Co-op	0
MATH 2341	4	EECE 2160	4				
EECE 2150	5	EE fundamentals	4				
PHYS 2303 (ND)	4	EECE 2000	1				
		General elective	4				
		17		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 (ND)	4	PHYS 3600 (ND, AD, WI)	4	Co-op	0
		CE fundamentals	4	General elective	4		
		EE fundamentals	5				
		ENGW 3302 (WD)	4				
		0		17		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3468	4	EECE 4790 (EI, WI, CE)	4	Co-op	0
		PHYS 5115 (ND, FQ)	4	EECE technical elective	4		
		EECE technical elective	4				
		EE fundamentals	5				
		EECE 3000	1				
		0		18		8	
Year 5							
		0		18		8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		PHYS advanced elective	4
		General elective	4
	0		12

Total Hours: 132

Electrical Engineering and Music with concentration in Music Technology, BSEE

This intercollege combined major is designed for students who would like to explore their interest in music technology while earning the benefit of a Bachelor of Science degree in electrical engineering. The music industry relies heavily on electronic technology in the production (e.g., electronic musical instruments and performance/recording technology), storage (e.g., mp3 and other file storage formats), and distribution (e.g., streaming services) of music. The program combines the content of two majors to allow students to learn the breadth and depth of the convergence between electrical engineering and music technology.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

Minimum 2.000 GPA required in EECE courses

Engineering Requirements

Complete 51 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Electrical Engineering Fundamentals		
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	5
EECE 2520	Fundamentals of Linear Systems	4
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	5
Computer Engineering Fundamentals		

Complete one of the following. If more than one computer engineering fundamentals course is taken, it may count as a technical elective: 4-5

EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322
EECE 2540	Fundamentals of Networks
EECE 2560	Fundamentals of Engineering Algorithms

Capstone Courses

EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

Technical Electives

Complete two of the following. If EECE 5697 is taken, students are required to complete a music elective. 8

EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322
EECE 4993	Independent Study
EECE 4991	Research
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
EECE 4992	Directed Study
GE 4608	Nanotechnology in Engineering
EECE 2540	Fundamentals of Networks
EECE 2750	Enabling Engineering
EECE 3324	Computer Architecture and Organization
EECE 3410	Electronics 2
EECE 4512	Biomedical Electronics
EECE 5155	Wireless Sensor Networks and the Internet of Things
EECE 5698	Special Topics in Electrical and Computer Engineering

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement: 3

GE 1501	Cornerstone of Engineering 1
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2 semester hours from the following course count toward the engineering requirement: 2

EECE 3468	Noise and Stochastic Processes
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3 semester hours from the following course count toward the engineering requirement: 3

GE 1502	Cornerstone of Engineering 2
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Professional Development

Code	Title	Hours
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Required course with additional credit not used in the engineering requirement above:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 33 semester hours in mathematics and science as indicated below:

Code	Title	Hours
CHEM 1151	General Chemistry for Engineers	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5
2 semester hours from the following course count toward this requirement:		2
EECE 3468	Noise and Stochastic Processes	
Supplemental Credit		
1 semester hour from the following course count toward this requirement:		1
GE 1502	Cornerstone of Engineering 2	

Music Requirements

Code	Title	Hours
Music Theory		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
Required Context Course		
MUSC 1001	Music in Everyday Life	4
Music in Context		
Complete one of the following:		4
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2315	History of Electronic Music	
MUSC 2317	Punk Rock	
MUSC 2320	40,000 Years of Music Technology	
MUSC 2340	Divas, DJs, and Double Standards	
MUSC 2351	Music, Sound, and the Screen	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	
Acoustics or Music Elective		
Complete one of the following. If EECE 5697 is taken, students are required to complete a music elective.		4
MUSC 2350	Acoustics and Psychoacoustics of Music	
MUSC 2000 to MUSC 5999		
Music Technology		
MUST 1220	Introduction to Music Technology	4
MUST 2431	Computer Music Fundamentals	4
Music Technology Electives		
Complete two of the following:		8

MUST 4520	Interactive Music Programming
MUST 4610	Composition for Electronic Instruments
MUST 3540	Special Topics in Music Technology

Writing Requirement and Additional NUPATH Courses

A grade of C or higher is required in both First-Year Writing and Advanced Writing in the Disciplines.

Code	Title	Hours
Writing		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPATH Requirements through Open Electives

NUPATH requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
Complete one academic, nonremedial, nonrepetitive course, equivalent to 4 semester hours.		4

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

136 total semester hours required

Electrical and Computer Engineering, BSEE or BSCompE

Students may choose to major in both electrical and computer engineering by following the combined-major program leading to a Bachelor of Science in Electrical Engineering or Bachelor of Science in Computer Engineering. Students take the required courses for both majors along with technical electives distributed among the areas of computer engineering; fields, waves, and optics; signals and systems; power engineering; and electronic circuits and devices. Additional NUPATH requirements must be fulfilled using general electives.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Engineering

Complete 68 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Electrical Engineering Fundamentals		
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	5
EECE 2520	Fundamentals of Linear Systems	4
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	5
Computer Engineering Fundamentals		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5
EECE 2540	Fundamentals of Networks	4
EECE 2560	Fundamentals of Engineering Algorithms	4
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
EECE Technical Electives		
Two CS courses from the following approved list may be taken toward the EECE technical elective requirement.		
Complete four of the following:		16
EECE 2750	Enabling Engineering	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
EECE 3324 to EECE 3410		
EECE 4512 to EECE 4698		
EECE 5155 to EECE 5698		
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3500	Object-Oriented Design	
CS 4850	Building Game Engines	
CS 3540 to CS 3800		
CS 4100 to CS 4770		
IS 4200 to IS 4700		
Supplemental Credit		
2 semester hours from the following course count toward the engineering requirement:		2
EECE 3468	Noise and Stochastic Processes	

3 semester hours from the following course count toward the engineering requirement:

GE 1501	Cornerstone of Engineering 1	3
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3 semester hours from the following course count toward the engineering requirement:

GE 1502	Cornerstone of Engineering 2	3
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Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 37 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Supplemental Credit

2 semester hours from the following course count toward the mathematics/science requirement:

EECE 3468	Noise and Stochastic Processes	2
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1 semester hour from the following course counts toward the mathematics/science requirement:

GE 1502	Cornerstone of Engineering 2	1
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Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4

or ENGW 3315 Interdisciplinary Advanced Writing in the Disciplines

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
	Complete four academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.	16

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

134 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1155 (ND)	3	MATH 2321 (FQ)	4	Vacation	0	Co-op	0
PHYS 1156 (AD)	1	CS 1800 (FQ)	4				
PHYS 1157	1	CS 1802	1				
EECE 2150 or 2160	5	EECE 2160 or 2150	4				
MATH 2341	4	EE or CE fundamentals	4				
General elective	4	EECE 2000	1				
	18		18		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EE or CE fundamentals	4	ENGW 3302 (WD)	4	Co-op	0

EE or CE fundamentals	4	General elective	4
EE or CE fundamentals	5		
EE or CE fundamentals	5		
0	18	8	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3000	1	EECE technical elective	4	Co-op	0
		EECE 3468	4	EECE 4790 (EI, WI, CE)	4		
		EE or CE fundamentals	5				
		EECE technical elective	4				
		EECE technical elective	4				
	0		18		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		EECE technical elective	4
		General elective	4
	0		12

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1155 (ND)	3	Co-op		Co-op		Vacation	
PHYS 1156 (AD)	1						
PHYS 1157	1						
EECE 2000	1						

EECE 2150 or 2160	5 or 4					
MATH 2341	4					
General elective	4					
	19-18		0		0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 (FQ)	4	Co-op		Co-op		General elective	4
CS 1802	1					ENGW 3302 (WD)	4
MATH 2321 (FQ)	4						
EECE 2160 or 2150	4 or 5						
EE or CE fundamentals	4						
	17-18		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EECE 3000	1	Co-op		Co-op		EECE technical elective	4
EE or CE fundamentals	4					EECE 4790 (EI, WI, CE)	4
EE or CE fundamentals	4						
EE or CE fundamentals	5						
EE or CE fundamentals	5						
	19		0		0		8

Year 5

Fall	Hours	Spring	Hours
EECE 3468	4	EECE technical elective	4
EECE 4792 (EI, WI, CE)	4	EECE technical elective	4
EE or CE fundamentals	5	General elective	4
EECE technical elective	4		
	17		12

Total Hours: 134

Biomedical Engineering, Minor

Medical imaging and biomedical electronics are important areas of biomedical engineering that are within the province of electrical engineering. The minor in biomedical engineering is open to all students in the university with the prerequisite calculus and physics background. The minor is particularly designed for majors in electrical or computer engineering, biology, health science fields, or other engineering departments who would like a background in relevant aspects of

biology and electrical engineering, with the opportunity to complete an interdisciplinary biomedical engineering capstone design project. Course work in anatomy and physiology and other health science topics is combined with technical engineering courses related to biomedical imaging and instrumentation.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Biology

Code	Title	Hours
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	5
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	5

Required Engineering

The course you select may also count toward your major.

Code	Title	Hours
Complete one of the following:		4
EECE 4512	Biomedical Electronics	
EECE 5664	Biomedical Signal Processing	
EECE 5648	Biomedical Optics	
EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 4993	Independent Study (must have a biomedical-engineering focus)	

Required Capstone-Design Courses

Complete the following two courses on a biologically oriented project:

Code	Title	Hours
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4

Elective Courses

One course must be outside your home department. Neither course can be used toward your major.

Code	Title	Hours
Complete two of the following:		8-10
Biology		
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	
BIOL 1119 and BIOL 1120	Integrated Anatomy and Physiology 2 and Lab for BIOL 1119	
BIOL 2299	Inquiries in Biological Sciences	
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	
BIOL 3405	Neurobiology	
BIOL 5581	Biological Imaging	

Chemical Engineering

CHME 5630	Biochemical Engineering
CHME 5699	Special Topics in Chemical Engineering

Civil/Industrial Engineering

CIVE 7251 Environmental Biological Processes

Electrical/Computer Engineering

EECE 4512 Biomedical Electronics

EECE 5664 Biomedical Signal Processing

EECE 5648 Biomedical Optics

EECE 5698 Special Topics in Electrical and Computer Engineering

EECE 4993 Independent Study

Mechanical/Industrial Engineering

ME 5665 Musculoskeletal Biomechanics

IE 4522 Human-Machine Systems

Physics

PHYS 4621 Biological Physics 1

PHYS 4623 Medical Physics

PHYS 4651 Medical Physics Seminar 1

PHYS 4652 Medical Physics Seminar 2

Psychology

PSYC 3452 Sensation and Perception

PSYC 3458 Biological Psychology

GPA Requirement

2.000 GPA required in the minor

Computer Engineering, Minor

The minor in computer engineering is open to all students in the university. The minor is designed for the student who would like a coherent background in the theory and laboratory practice of computer engineering.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

This minor is not open to students in the Department of Electrical and Computer Engineering.

Complete a total of four courses for the minor.

Required Core Course

Code	Title	Hours
EECE 2160	Embedded Design: Enabling Robotics	4

Required Fundamental Courses

Code	Title	Hours
Complete two of the following: 8-9		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 2540	Fundamentals of Networks	
EECE 2560	Fundamentals of Engineering Algorithms	

Computer Engineering Technical Elective

Fundamentals not taken to satisfy the above requirement may be used as a technical elective.

Code	Title	Hours
Complete one of the following: 4-5		
EECE 4993	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
EECE 2322 to EECE2750		
EECE3324 to EECE 4698		
EECE 5576 to EECE 5698		

GPA Requirement

2.000 GPA required in the minor

Computational Data Analytics, Minor

This minor, offered by the Department of Electrical and Computer Engineering in the College of Engineering, seeks to provide a coherent technical foundation in the fundamentals and application of data analytics. The minor addresses the growing demand in industry to be able to apply background in probability/statistics, calculus, engineering problem solving, computing, and analytical principles/tools to identify patterns and trends, find clusters and outliers, and characterize/summarize the mountain of data being generated in our world. This program leverages faculty expertise in electrical and computer engineering and includes courses from across the College of Engineering, College of Science, and College of Computer and Information Science.

Students need to complete the program requirements with at least three courses that are not part of their major required course work.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Students need to complete the program requirements with at least three courses that are not part of their major required course work.

Required Courses

Code	Title	Hours
EECE 2300	Computational Methods for Data Analytics (not required for EECE majors)	4
EECE 5644	Introduction to Machine Learning and Pattern Recognition	4
EECE 5642	Data Visualization	4

Probability and Statistics

Code	Title	Hours
Complete one of the following: 4		
CIVE 3464	Probability and Engineering Economy for Civil Engineering	
EECE 3468	Noise and Stochastic Processes	
GE 2361	Mathematical Methods for Engineers	
MATH 2280	Statistics and Software	
MATH 3081	Probability and Statistics	

Elective

Code	Title	Hours
Complete one of the following:		4
EECE 2560	Fundamentals of Engineering Algorithms	
EECE 2520	Fundamentals of Linear Systems	
EECE 4542	Advanced Engineering Algorithms	
EECE 4626	Image Processing and Pattern Recognition	
EECE 4694	Numerical Methods and Computer Applications	
EECE 5639	Computer Vision	
CS 3000	Algorithms and Data	
CS 3200	Database Design	
CS 4240	Large-Scale Parallel Data Processing	
CS 5200	Database Management Systems	
IE 4515	Operations Research	
IE 5640	Data Mining for Engineering Applications	
IS 4200	Information Retrieval	
MATH 4525	Applied Analysis	

GPA Requirement

2.000 GPA required in the minor

Electrical Engineering, Minor

A minor in electrical engineering is particularly designed for majors in math, science, computer science, or other engineering departments who would like a coherent background in the theory and laboratory practice of electrical engineering.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

This minor is not open to students in the Department of Electrical and Computer Engineering because of overlap with the majors.

Complete a total of four courses for the minor.

Required Core Course

Code	Title	Hours
Complete one of the following:		5
EECE 2150	Circuits and Signals: Biomedical Applications	
EECE 2210 and EECE 2211	Electrical Engineering and Lab for EECE 2210	

Fundamental Core Courses

Code	Title	Hours
Complete two of the following:		9-10
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	

Electrical Engineering Technical Electives

Code	Title	Hours
Fundamentals not taken to satisfy the above requirement may be used as a technical elective.		
Complete one of the following:		4
EECE 4993	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
EECE 2322 to EECE 2750		
EECE 3324 to EECE 4698		
EECE 5576 to EECE 5698		

GPA Requirement

2.000 GPA required in the minor

Robotics, Minor

The minor in robotics is open to all students in the university. The minor is designed for the student who would like a coherent background in the theory and practice of robotics.

Students need to complete the program requirements with at least three courses that are not part of their major required course work.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
ME 3460	Robot Dynamics and Control	4
Complete one of the following:		4
EECE 2210 and EECE 2211	Electrical Engineering and Lab for EECE 2210	
EECE 2160	Embedded Design: Enabling Robotics	

Electives

Code	Title	Hours
Complete three of the following:		12
EECE 4626	Image Processing and Pattern Recognition	
EECE 4630	Robotics	
EECE 5639	Computer Vision	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 5580	Classical Control Systems	
ME 5245	Mechatronic Systems	
ME 5250	Robot Mechanics and Control	
IE 4522	Human-Machine Systems	
IE 5630	Biosensor and Human Behavior Measurement	
CS 4100	Artificial Intelligence	
CS 4610	Robotic Science and Systems	

GPA Requirement

2.000 GPA required in the minor

Mechanical and Industrial Engineering

Website (<http://www.mie.neu.edu>)

Hanchen Huang, PhD

Professor and Chair

Andrew Gouldstone, PhD

Associate Professor, Associate Chair, and Director of Mechanical Engineering

Emanuel S. Melachrinoudis, PhD

Professor, Associate Chair, and Director of Industrial Engineering

334 Snell Engineering Center

617.373.2740

617.373.2921 (fax)

Mission of the Department

The mission of the Department of Mechanical and Industrial Engineering is to educate students for professional and technical excellence; to perform research to advance the science and practice of engineering; to engage in service activities that advance the department, the university, and the profession; and to instill in ourselves and our students habits and attitudes that promote ethical behavior, professional responsibility, and careers that advance the well-being of society.

The program educational objectives for the mechanical engineering and industrial engineering programs are as follows. Graduates from our undergraduate programs will demonstrate technical excellence in their chosen fields, anticipate and respond to societal changes, and develop careers with depth and flexibility, while retaining a professional and intellectual thrust throughout. Specifically:

1. Graduates will contribute to the advancement of the mechanical or industrial engineering field, displaying leadership and innovation in the larger community while fulfilling the expectations of their employers.
2. Graduates will engage in activities that promote professional development and personal growth.

Mechanical Engineering

Mechanical engineers design, develop, and support the manufacture of machinery and devices to transmit power or to convert energy from thermal to mechanical form in order to power the modern world and its machines. Traditionally, mechanical engineers have designed and tested devices, such as heating and air-conditioning systems, machine tools, internal-combustion engines, and steam power plants. Today they also play primary roles in the development of new technologies in a variety of fields—energy conversion, solar energy utilization, environmental control, prosthetics, transportation, manufacturing, robotics, and new-materials development.

Mechanical engineers use computers to formulate preliminary and final designs of systems or devices, to perform calculations that predict the behavior of the design, and to collect and analyze performance data from system testing or operation. Mechanical engineering has been heavily influenced by recent advances in computer hardware and software.

The curriculum in mechanical engineering focuses on four areas: applied mechanics, thermofluids engineering, materials science, and controls. Applied mechanics is the study of the motion and deformation of

structural elements acted on by forces in devices that range from rotating industrial dynamos to dentists' drills. Thermofluids engineering deals with the motion of fluids and the transfer of energy, as in the cooling of electronic components or the design of gas turbine engines. Materials science is concerned with the relationship between the structure and properties of materials and with the control of structure, through processing, to achieve desired properties. Practical applications are in the development of composite materials, metallurgical process industries, and advanced functional materials. Controls are critical to any engineered system in which sensors and actuators of several types communicate and function.

Courses in each area form the foundation for advanced analytical and creative design courses that culminate in a two-semester capstone design project. Faculty encourage students throughout the curriculum to use computer-aided design tools and high-performance computer workstations.

Industrial Engineering

Industrial engineers design and analyze systems that include people, equipment, and materials and their interactions and performance in the workplace. An industrial engineer collects this information and evaluates alternatives to make decisions that best advance the goals of the enterprise. Industrial engineers work in manufacturing firms, hospitals, banks, public utilities, transportation, government agencies, insurance companies, and construction firms. Among the projects they undertake are design and implementation of a computer-integrated supply chain or manufacturing system, facilities planning for a variety of industries, design of a robotics system in a manufacturing environment, long-range corporate planning, development and implementation of a quality-control system, simulation analyses to improve processes and make operational decisions, design of healthcare operations to enhance patient safety and improve efficiency, productivity, and development of computer systems for information control.

The program in industrial engineering offers students a base of traditional engineering courses, such as work design, human-machine systems, probability, statistics, and engineering economy, while emphasizing such contemporary areas as simulation modeling, engineering database systems, quality assurance, logistics and supply chain management, operations research, and facilities planning. Students integrate the knowledge acquired in these courses in a two-semester capstone design project.

Other Programmatic Features

More than 90 percent of the department's undergraduate students take advantage of the cooperative education program. Cooperative education assignments increase in responsibility and technical challenge as students progress through the program. Entry level co-op positions in **mechanical engineering** may be in manufacturing, quality assurance and testing, or involve 3-D CAD modeling, while more advanced-level positions will allow students to gain experience in the design process, including advanced 3-D modeling, design for manufacturability, prototyping, and systems engineering. Students in the **industrial engineering** discipline may utilize co-op to concentrate on one industry segment and build an increasingly technical skill set with each experience or explore the breadth of career opportunities over the course of several co-op rotations such as healthcare process improvement, supply chain logistics, business analytics, manufacturing operations, and more.

The department also offers significant research opportunities throughout all fields of mechanical and industrial engineering, including participating

in research centers based in our department and college, as well as new interdisciplinary graduate and professional master's programs.

Our students have an opportunity to obtain a broad knowledge base in science, engineering, and general studies that allows them flexibility in career development and graduate education. At the same time, our graduates should be responsible and scientifically educated citizens, prepared to contribute personally as well as professionally to an educated, democratic society.

Programs

Bachelor of Science in Industrial Engineering (BSIE)

- Industrial Engineering (p. 422)

Bachelor of Science in Mechanical Engineering (BSME)

- Mechanical Engineering (p. 426)
- Mechanical Engineering and Physics (p. 430)

Minors

- Biomechanical Engineering (p. 431)
- Healthcare System Operation (p. 432)
- Industrial Engineering (p. 432)
- Mechanical Engineering (p. 433)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 433)

Industrial Engineering, BSIE

Industrial engineering involves the design and analysis of systems that include people, equipment, and materials and their interactions and performance in the workplace. An industrial engineer collects this information and evaluates alternatives to make decisions that best advance the goals of the enterprise.

The program in industrial engineering offers students a base of traditional engineering courses, such as work design, human-machine systems, probability, statistics, and engineering economy, while emphasizing such contemporary areas as simulation modeling, engineering database systems, quality assurance, logistics and supply chain management, operations research, and facilities planning. Students integrate the knowledge acquired in these courses in a two-semester capstone design project.

Industrial engineers work in manufacturing firms, hospitals, banks, public utilities, transportation, government agencies, insurance companies, and construction firms. Among the projects they undertake are design and implementation of a computer-integrated supply chain or manufacturing system; facilities planning for a variety of industries; design of a robotics system in a manufacturing environment; long-range corporate planning; development and implementation of a quality-control system; simulation analyses to improve processes and make operational decisions; design of healthcare operations to enhance patient safety; and improve efficiency, productivity, and development of computer systems for information control.

More than 90 percent of department undergraduate students take advantage of the cooperative education program. Cooperative education assignments generally increase in level of responsibility as students gain theoretical and technical knowledge through their academic work. A sophomore might begin as a computer/data analyst evaluating the

performance of a manufacturing system and progress to designing manufacturing engineering workstations by the senior year.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Engineering

Complete 58 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
IE 2310 and IE 2311	Introduction to Industrial Engineering and Recitation for IE 2310	4
IE 3425 and IE 3426	Engineering Database Systems and Recitation for IE 3425	4
IE 4510	Simulation Modeling and Analysis	4
IE 4516	Quality Assurance	4
IE 4522 and IE 4523	Human-Machine Systems and Lab for IE 4522	5
IE 4525	Logistics and Supply Chain Management	4
IE 4530 and IE 4531	Manufacturing Systems and Techniques and Lab for IE 4530	5
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5
Engineering Electives		
Complete 8 semester hours of technical electives in the following subject areas:		8
CHME, CIVE, EECE, EMGT, IE, ME, and MEIE		
Supplemental Credit		
1 semester hour from the following course counts toward the engineering requirement:		1
IE 3412	Engineering Probability and Statistics	
3 semester hours from the following course count toward the engineering requirement:		3
IE 4512	Engineering Economy	
2 semester hours from the following course count toward the engineering requirement:		2
IE 4515	Operations Research	
2 semester hours from the following course count toward the engineering requirement:		2
IE 4520	Stochastic Modeling	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	

3 semester hours from the following course count toward the engineering requirement:

GE 1502	Cornerstone of Engineering 2	3
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Professional Development

Code	Title	Hours
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Required Professional Development

GE 1000	Introduction to the Study of Engineering	1
MEIE 2000	Introduction to Engineering Co-op Education	1
MEIE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:

GE 1501	Cornerstone of Engineering 1	1
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Supporting Courses: Mathematics/Science

Complete 39 semester hours in mathematics and science as indicated below.

Code	Title	Hours
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Required Mathematics/Science

CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Science Elective

Complete one of the following:

PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214 (and Lab for CHEM 1214)	
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	

Supplemental Credit

3 semester hours from the following course count toward the mathematics/science requirement:

IE 3412	Engineering Probability and Statistics	3
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1 semester hour from the following course counts toward the mathematics/science requirement:

IE 4512	Engineering Economy	1
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2 semester hours from the following course count toward the mathematics/science requirement:

IE 4515	Operations Research	2
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2 semester hours from the following course count toward the mathematics/science requirement:

IE 4520	Stochastic Modeling	2
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1 semester hour from the following course counts toward the mathematics/science requirement:

GE 1502	Cornerstone of Engineering 2	1
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Additional NUPath Courses

Code	Title	Hours
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Writing

A grade of C or higher is required:

ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPath Requirements through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
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Complete seven academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

137 total semester hours required

Plan of Study

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342 (FQ)	4	MATH 2321 (FQ)	4	General elective	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341 – Calculus 1 – 4 SH)		PHYS 1151 (ND)	3	General elective	4		
CHEM 1151	4	PHYS 1152 (AD)	1				
CHEM 1153	0	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				

GE 1501	4 General elective	4		
ENGW 1111 (WF)	4			
	17	17	8	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op		Co-op		MATH 3081 (AD)	4
IE 2310 (WI)	4					General elective	4
IE 2311	0						
IE 3425	4						
IE 3426	0						
Science elective	5e						
MEIE 2000	1						
	13-18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IE 4510	4	Co-op		Co-op		General elective	4
IE 4515	4	ENGW 3302 (to be taken online during co-op (WD))	4			General elective	4
IE 4516	4						
MEIE 3000	1						
IE 4530	4						
IE 4531	1						
	18		4		0		8

Year 4

Fall	Hours	Spring	Hours
IE 4512	4	MEIE 4702 (EI, WI, CE)	5
IE 4520	4	IE 4522	4
IE 4525	4	IE 4523	1
MEIE 4701 (EI, WI, CE)	1	Technical elective	4
Technical elective	4	General elective	4
	17		18

Total Hours: 128-133

Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342 (FQ)	4	MATH 2321 (FQ)	4	General elective		4 Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341 – Calculus 1 – 4 SH)		PHYS 1151 (ND)	3	General elective		4	

CHEM 1151	4	PHYS 1152 (AD)	1
CHEM 1153	0	PHYS 1153	1
GE 1000	1	GE 1502 (ER)	4

GE 1501	4	General elective	4
ENGW 1111 (WF)	4		
	17	17	8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	IE 3412 (AD)	4	General elective		4 Co-op	
IE 2310 (WI)	4	IE 4512	4	General elective		4	
IE 2311	0	MEIE 2000	1				
IE 3425	4	General elective	4				
IE 3426	0	General elective	4				
Science elective	5						
	17		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		IE 4510	4	MEIE 4701 (EI, WI, CE)	1	Co-op	
ENGW 3302 (to be taken online during co-op (WD))	4	IE 4515	4	General elective		4	
		IE 4516	4	Technical elective		4	
		MEIE 3000	1				
		IE 4530	4				
		IE 4531	1				
	4		18		9		0

Year 4

Fall	Hours	Spring	Hours
Co-op		MEIE 4702 (EI, WI, CE)	5
		IE 4520	4
		IE 4522	4
		IE 4523	1
		IE 4525	4
	0		18

Total Hours: 133

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation		0 Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				

CHEM 1153	0	PHYS 1152 (AD)	1		
GE 1000	1	PHYS 1153	1		
GE 1501	4	GE 1502 (ER)	4		
ENGW 1111 (WF)	4	General elective	4		
	17		17	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	MATH 2341	4	Vacation	0	Co-op	0
IE 2310 (WI)	4	IE 3412 (AD)	4				
IE 2311	0	IE 4512	4				
IE 3425	4	MEIE 2000	1				
IE 3426	0	General elective	4				
Science elective	5						
	17		17	0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IE 4516	4	General elective	4	Co-op	0
		ENGW 3302 (WD)	4	General elective	4		
		IE 4515	4				
		IE 4510	4				
	0		16	8		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MEIE 3000	1	MEIE 4701	1	Co-op	0
		IE 4520	4	General elective	4		
		IE 4525	4	General elective	4		
		IE 4530	4				
		IE 4531	1				
		Technical elective	4				
	0		18	9		0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	MEIE 4702 (EI, WI, CE)	5
		IE 4522	4
		IE 4523	1
		Technical elective	4
		General elective	4
	0		18

Total Hours: 137

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17	0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	Co-op	0	Co-op	0	Vacation	0
IE 2310 (WI)	4						
IE 2311	0						
IE 3425	4						
IE 3426	0						
Science elective	5						
MEIE 2000	1						
	18		0	0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3302 (WD)	4	Co-op	0	Co-op	0	General elective	4
IE 3412 (AD)	4					General elective	4
IE 4512	4						
MATH 2341	4						
	16		0	0		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IE 4510	4	Co-op	0	Co-op	0	General elective	4
IE 4515	4					General elective	4
IE 4516	4						
MEIE 3000	1						
IE 4530	4						
IE 4531	1						
	18		0	0		8	

Year 5

Fall	Hours	Spring	Hours
Technical elective	4	MEIE 4702 (EI, WI, CE)	5
IE 4525	4	IE 4522	4
MEIE 4701 (EI, WI, CE)	1	IE 4523	1
IE 4520	4	Technical elective	4

General elective	4 General elective	4
		17
		18

Total Hours: 137

Mechanical Engineering, BSME

Mechanical engineering involves the design, development, and manufacture of machinery and devices to transmit power or to convert energy from thermal to mechanical form in order to power the modern world and its machines. Its current practice has been heavily influenced by recent advances in computer hardware and software.

Mechanical engineers use computers to formulate preliminary and final designs of systems or devices, to perform calculations that predict the behavior of the design, and to collect and analyze performance data from system testing or operation.

Traditionally, mechanical engineers have designed and tested devices, such as heating and air-conditioning systems, machine tools, internal-combustion engines, and steam power plants. Today they also play primary roles in the development of new technologies in a variety of fields—energy conversion, solar energy utilization, environmental control, prosthetics, transportation, manufacturing, and new-materials development.

The curriculum in mechanical engineering focuses on four areas: applied mechanics, thermofluids engineering, materials science, and controls. Applied mechanics is the study of the motion and deformation of structural elements acted on by forces in devices that range from rotating industrial dynamos to dentists' drills. Thermofluids engineering deals with the motion of fluids and the transfer of energy, as in the cooling of electronic components or the design of gas turbine engines. Materials science is concerned with the relationship between the structure and properties of materials and with the control of structure, through processing, to achieve desired properties. Practical applications are in the development of composite materials, metallurgical process industries, and advanced functional materials. Controls are critical to any engineered system in which sensors and actuators of several types communicate and function.

Courses in each area form the foundation for advanced analytical and creative design courses that culminate in a two-semester capstone design project. Faculty encourages students throughout the curriculum to use computer-aided design tools and high-performance computer workstations.

More than 90 percent of department undergraduate students take advantage of the cooperative education program. Cooperative education assignments increase in responsibility and technical challenge as students progress through the program. Initial positions may involve computer-intensive CAD/CAM assignments or programming tasks, while more advanced jobs will place students in charge of design, quality-control systems, and performance testing of equipment.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Engineering

Complete 69 semester hours in engineering as indicated below:

Code	Title	Hours
Required Engineering		
EECE 2210 and EECE 2211	Electrical Engineering and Lab for EECE 2210	5
ME 2340 and ME 2341	Introduction to Material Science and Lab for ME 2340	5
ME 2350	Engineering Mechanics and Design	4
ME 2355 and ME 2356	Mechanics of Materials and Lab for ME 2355	5
ME 2380	Thermodynamics	4
ME 3455 and ME 3456	Dynamics and Vibrations and Lab for ME 3455	5
ME 3475 or ME 3480	Fluid Mechanics International Applications of Fluid Mechanics	4
ME 4505 and ME 4506	Measurement and Analysis with Thermal Science Application and Lab for ME 4505	5
ME 4508	Mechanical Engineering Computation and Design	4
ME 4550	Mechanical Engineering Design	4
ME 4555	System Analysis and Control	4
ME 4570	Thermal Systems Analysis and Design	4
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5

Mechanical and Industrial Engineering Technical Elective

Complete one technical elective in one of the following subject areas:

EMGT, ENGR, IE, ME, or MEIE		
Supplemental Credit		
3 semester hours from the following course counts toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course counts toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
MEIE 2000	Introduction to Engineering Co-op Education	1

MEIE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 35 semester hours in mathematics and science as indicated below:

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Science/Math Elective		
Complete one of the following:		4-5
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	
MATH 3081	Probability and Statistics	
MATH 2310	Discrete Mathematics	
PHYS 2303	Modern Physics	
PHYS 3601	Classical Dynamics	
PHYS 3602	Electricity and Magnetism	

Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Writing Requirements

Code	Title	Hours
A grade of C or higher is required in each course:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.		24

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

140 total semester hours required

**Plan of Study
Four Years, Two Co-ops in Spring/Summer 1**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342 (FQ)	4	MATH 2321 (FQ)	4	ME 2350	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341-Calculus 1 – 4 SH)		PHYS 1151 (ND)	3	General elective	4		
CHEM 1151 (ND)	4	PHYS 1152 (AD)	1				
CHEM 1153	0	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General elective	4				
ENGW 1111 (WF)	4						
		17	17	8	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op		Co-op		ME 3475	4
PHYS 1155 (ND)	3					General elective	4
PHYS 1156 (AD)	1						
PHYS 1157	1						
ME 2355	4						
ME 2356	1						
ME 2380	4						
		18	0	0	8		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ME 3455	4	Co-op		Co-op		ME 4550	4
ME 3456	1	ENGW 3302 (to be taken online during co-op (WD))	4				
ME 4505 (AD)	4					General elective	4

ME 4506	1
ME 4570	4
MEIE 2000	1
Elective	4
<hr/>	
	19
	4
	0
	9

Year 4

Fall	Hours	Spring	Hours
EECE 2210	4	ME 4508	4
EECE 2211	1	MIE technical elective	4
ME 4555	4	**Science/math elective	4
MEIE 4702 (EI, WI, CE)	5	ME 2340 (WI)	4
General elective	4	ME 2341	1
MEIE 3000	1		
<hr/>		<hr/>	
	19		17

Total Hours: 136

Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1342 (FQ)	4	MATH 2321 (FQ)	4	ME 2350	4	Vacation	0
Students will need to have AP credit for Calc. AB (MATH1341-Calculus 1-4 SH)		PHYS 1151 (ND)	3	General elective	4		
CHEM 1151 (ND)	4	PHYS 1152 (AD)	1				
CHEM 1153	0	PHYS 1153	1				
GE 1000	1	GE 1502 (ER)	4				
GE 1501	4	General elective	4				
ENGW 1111 (WF)	4						
<hr/>		<hr/>		<hr/>		<hr/>	
	17		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	ME 2380	4	ME 3475	4	Co-op	
PHYS 1155 (ND)	3	ME 3455	4	General elective	4		
PHYS 1156 (AD)	1	ME 3456	1				
PHYS 1157	1	ME 2340 (WI)	4				
ME 2355	4	ME 2341	1				
ME 2356	1	MEIE 2000	1				
General elective	4	General elective	4				
<hr/>		<hr/>		<hr/>		<hr/>	
	18		19		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ME 4505 (AD)	4	ME 4550	4	Co-op	
ENGW 3302 (to be taken online during co-op (WD))	4	ME 4506	1	MEIE 4701 (EI, WI, CE)	1		
		EECE 2210	4	General elective	4		
		EECE 2211	1				
		ME 4570	4				
		ME 4555	4				
		MEIE 3000	1				
<hr/>		<hr/>		<hr/>		<hr/>	
	4		19		9		0

Year 4

Fall	Hours	Spring	Hours
Co-op		ME 4508	4
		**Science/math elective	4
		MEIE 4702 (EI, WI, CE)	5
		MIE technical elective	4
<hr/>		<hr/>	
	0		17

Total Hours: 136

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
<hr/>		<hr/>		<hr/>		<hr/>	
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ME 2350	4	MATH 2341	4	Vacation	0	Co-op	0
General elective	4	ME 2355	4				
PHYS 1155 (ND)	3	ME 2356	1				
PHYS 1156 (AD)	1	ME 2380	4				
PHYS 1157	1	MEIE 2000	1				
MATH 2321 (FQ)	4	General elective	4				
<hr/>		<hr/>		<hr/>		<hr/>	
	17		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ME 4508	4	ME 3475	4	Co-op	0
		ENGW 3302 (WD)	4	General elective	4		
		ME 2340 (WI)	4				
		ME 2341	1				
		ME 3455	4				
		ME 3456	1				
	0		18		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ME 4505 (AD)	4	ME 4550	4	Co-op	0
		ME 4506	1	MEIE 4701 (EI, WI, CE)	1		
		ME 4555	4	General elective	4		
		ME 4570	4				
		MEIE 3000	1				
		Math/science elective	4				
	0		18		9		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	MEIE 4702 (EI, WI, CE)	5
		EECE 2210	4
		EECE 2211	1
		ME or IE technical elective	4
		General elective	4
	0		18

Total Hours: 140

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	4	Vacation	0
CHEM 1151	4	PHYS 1151 (ND)	3				
CHEM 1153	0	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
ENGW 1111 (WF)	4	General elective	4				
	17		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	Co-op	0	Co-op	0	Vacation	0
PHYS 1155 (ND)	3						
PHYS 1156 (AD)	1						
PHYS 1157	1						
ME 2350	4						
MEIE 2000	1						
General elective	4						
	18		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2341	4	Co-op	0	Co-op	0	ENGW 3302 (WD)	4
ME 2340 (WI)	4					ME 3475	4
ME 2341	1						
ME 2355	4						
ME 2356	1						
ME 2380	4						
	18		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ME 3455	4	Co-op	0	Co-op	0	ME 4550	4
ME 3456	1					MEIE 4701 (EI, WI, CE)	1
ME 4505 (AD)	4					General elective	4
ME 4506	1						
ME 4508	4						
ME 4570	4						
	18		0		0		9

Year 5

Fall	Hours	Spring	Hours
ME 4555	4	ME or IE technical elective	4
MEIE 3000	1	Math/science elective	4
EECE 2210	4	General elective	4
EECE 2211	1	General elective	4
MEIE 4702 (EI, WI, CE)	5		
General elective	4		
	19		16

Total Hours: 140

Mechanical Engineering and Physics, BSME

This undergraduate program takes advantage of the physical similarities between mechanical engineering and physics, providing students with the opportunity to pursue studies that explore both topics. The program culminates with mechanical engineering capstone design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in IE, ME, and MEIE courses

Engineering Requirement

Complete 60 semester hours in engineering as indicated below:

Code	Title	Hours
Required Engineering		
ME 2340 and ME 2341	Introduction to Material Science and Lab for ME 2340	5
ME 2350	Engineering Mechanics and Design	4
ME 2355 and ME 2356	Mechanics of Materials and Lab for ME 2355	5
ME 2380	Thermodynamics	4
ME 3455 and ME 3456	Dynamics and Vibrations and Lab for ME 3455	5
ME 3475 or ME 3480	Fluid Mechanics International Applications of Fluid Mechanics	4
ME 4505 and ME 4506	Measurement and Analysis with Thermal Science Application and Lab for ME 4505	5
ME 4508	Mechanical Engineering Computation and Design	4
ME 4550	Mechanical Engineering Design	4
ME 4555	System Analysis and Control	4
ME 4570	Thermal Systems Analysis and Design	4
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5
Supplemental Credit		
3 semester hours from the following course counts toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course counts toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development Requirement

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
MEIE 2000	Introduction to Engineering Co-op Education	1
MEIE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Mathematics/Science Requirement

Complete 59 semester hours in mathematics and science as indicated below:

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5
PHYS 2303	Modern Physics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
PHYS 3602	Electricity and Magnetism	4
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3601	Classical Dynamics	4
PHYS 5318	Principles of Experimental Physics	4

Advanced Physics Elective

Complete one 4-semester-hour course in the following range: PHYS 3600 to PHYS 5999

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement:

GE 1502	Cornerstone of Engineering 2	
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Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
ENGW 1111	First-Year Writing (a grade of C or higher is required)	4
ENGW 3302	Advanced Writing in the Technical Professions (a grade of C or higher is required)	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Integrative Requirement

Principles of Experimental Physics (PHYS 5318) is part of the mathematics/science requirement above and is an integrative course.

Code	Title	Hours
PHYS 5318	Principles of Experimental Physics	4

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0	
CHEM 1151	4	PHYS 1165 (ND)	4					
CHEM 1153	0	PHYS 1166 (AD)	1					
PHYS 1161 (ND)	4	GE 1502 (ER)	4					
PHYS 1162 (AD)	1	ENGW 1111 (WF)	4					
GE 1000	1							
GE 1501	4							
		18			17			0
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
MATH 2321 (FQ)	4	PHYS 2303 (ND)	4	Vacation	0	Co-op	0	
MATH 2341	4	MEIE 2000	1					
PHYS 2371 (ND)	3	ME 2340 (WI)	4					
PHYS 2372 (EI)	1	ME 2341	1					
ME 2350	4	ME 2355	4					
		ME 2356	1					
		ME 2380	4					
		16			19			0

Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	PHYS 3602 (ND)	4	ME 3475	4	Co-op	0	
		ME 3455	4	PHYS 3600 (ND, AD, WI)	4			
		ME 3456	1					
		ME 4508	4					
		ENGW 3302 (WD)	4					
		0			17			8
								0

Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	PHYS 3601 (ND)	4	ME 4550	4	Co-op	0	
		MEIE 3000	1	MEIE 4701 (EI, WI, CE)	1			
		ME 4505 (AD)	4	General elective	4			
		ME 4506	1					
		ME 4555	4					
		ME 4570	4					
		0			18			9
								0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	MEIE 4702 (EI, WI, CE)	5
		PHYS 5318 (ND, AD, CE)	4
		PHYS advanced elective	4
		General elective	4
		0	17

Total Hours: 139

Biomechanical Engineering, Minor

This minor provides an opportunity for students to explore the interaction between mechanical engineering and health. Recommended for students interested in aspects of engineering related to human kinematics, including biomedical devices, joint injury, prosthetic development, human-machine systems, and/or prosthetics.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Biology

Code	Title	Hours
Biology 1		
Complete one of the following:		5
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	

BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
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Anatomy and Physiology

BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	5
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Required Mechanical Engineering

Code	Title	Hours
ME 5665	Musculoskeletal Biomechanics	4
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5

Technical Elective

Additional electives may be approved by your academic advisor.

Code	Title	Hours
Complete one of the following:		
IE 4520	Stochastic Modeling	4-5
IE 4522 and IE 4523	Human-Machine Systems and Lab for IE 4522	
ME 4640	Mechanical Behavior and Processing of Materials	
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
PHYS 4621	Biological Physics 1	

GPA Requirement

2.000 GPA required in the minor

Healthcare System Operations, Minor

The objective of the minor in healthcare system operations is to prepare students to apply industrial and systems engineering methods in healthcare applications. Distinct from other service industries, healthcare systems are characterized by extensive complexities driven by communication between and interdependencies among multiple actors, and the need to simultaneously address multiple competing objectives pertaining to economic, quality-driven, individual-driven, and population-driven goals. This minor will benefit students by highlighting the unique features of this industry and methods for addressing its unique challenges to engineer improvements to the design, operation, and management of healthcare systems.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

At most, one course from the minor may be counted toward major requirements.

Code	Title	Hours
Required Courses		
IE 5617	Lean Concepts and Applications	4
IE 5400	Healthcare Systems Modeling and Analysis	4
or IE 3500	Introduction to Healthcare Systems Engineering	
PHTH 1260	The American Healthcare System	4

Electives

Complete one of the following:		4
PHTH 4511	Healthcare Management	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
NRSG 5121	Epidemiology and Population Health	
IE 5374	Special Topics in Industrial Engineering (System Dynamics in Healthcare)	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	

GPA Requirement

2.000 GPA required in the minor

Industrial Engineering, Minor

This minor provides an opportunity for students to explore core aspects of industrial engineering, including mathematical foundations, along with a technical focus into one of the many industrial engineering subdisciplines.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
IE 2310	Introduction to Industrial Engineering	4
IE 4515	Operations Research	4
IE 3412	Engineering Probability and Statistics (or equivalent)	4

Technical Elective

Consult mechanical and industrial engineering academic advisor for additional electives.

Code	Title	Hours
Complete one of the following:		
IE 3425	Engineering Database Systems	4
IE 4510	Simulation Modeling and Analysis	
IE 4512	Engineering Economy	
IE 4516	Quality Assurance	
IE 4520	Stochastic Modeling	
IE 4522 and IE 4523	Human-Machine Systems and Lab for IE 4522	
IE 4525	Logistics and Supply Chain Management	
IE 4530	Manufacturing Systems and Techniques	

GPA Requirement

2.000 GPA required in the minor

Mechanical Engineering, Minor

This minor provides an opportunity for students to explore core aspects of mechanical engineering, including mechanical and thermal foundations, along with a technical focus into one of the mechanical engineering disciplines (mechanics, thermofluids, materials, and/or controls).

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
ME 2350	Engineering Mechanics and Design	4
ME 2380	Thermodynamics	4

Mechanical Engineering Technical Electives

Code	Title	Hours
Complete two of the following:		8
ME 2340	Introduction to Material Science	
ME 2355	Mechanics of Materials	
ME 3455	Dynamics and Vibrations	
ME 3475	Fluid Mechanics	
or ME 3480	International Applications of Fluid Mechanics	
ME 4508	Mechanical Engineering Computation and Design	
ME 4550	Mechanical Engineering Design	
ME 4555	System Analysis and Control	
ME 4570	Thermal Systems Analysis and Design	

GPA Requirement

2.000 GPA required in the minor

Accelerated Bachelor/Graduate Degree Programs

The College of Engineering offers a number of bachelor's/master's degree programs that allow students to accelerate the attainment of the master's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. These degrees may be earned either simultaneously in five years, or sequentially, with the bachelor's degree attainment followed by a PlusOne year to complete the master's degree. See additional information on engineering bachelor's/master's programs (<http://www.coe.neu.edu/advising/flexible-degree-programs>).

Programs

Bioengineering

- Bioengineering, BSBioE/Engineering Management, MSEM
- Bioengineering, BSBioE/Bioengineering, MSBioE

Chemical Engineering

- Chemical Engineering, BSCHE/Chemical Engineering, MSCHE
- Chemical Engineering, BSCHE/Engineering Management, MSEM

Civil and Environmental Engineering

- Civil Engineering, BSCE/Civil Engineering, MSCivE
- Civil Engineering, BSCE/Energy Systems, MSENES
- Civil Engineering, BSCE/Engineering and Public Policy, MS
- Civil Engineering, BSCE/Engineering Management, MSEM
- Civil Engineering, BSCE/Environmental Engineering, MSEnVE
- Civil Engineering, BSCE/Sustainable Building Systems, MSSBS
- Environmental Engineering, BSEnVE/Environmental Engineering, MSEnVE

Electrical and Computer Engineering

- Electrical Engineering, BSEE/Electrical and Computer Engineering, MSECE
- Electrical Engineering, BSEE/Engineering Management, MSEM
- Computer Engineering, BSEE/Electrical and Computer Engineering, MSECE
- Computer Engineering, BSEE/Engineering Management, MSEM

Industrial and Mechanical Engineering

- Industrial Engineering, BSIE/Industrial Engineering, MSIE
- Industrial Engineering, BSIE/Energy Systems, MSENES
- Industrial Engineering, BSIE/Engineering Management, MSEM
- Industrial Engineering, BSIE/Operations Research, MSOR
- Mechanical Engineering, BSME/Law, JD
- Mechanical Engineering, BSME/Mechanical Engineering, MSME
- Mechanical Engineering, BSME/Energy Systems, MSENES
- Mechanical Engineering, BSME/Engineering Management, MSEM

Bouvé College of Health Sciences

Website (<http://www.northeastern.edu/bouve>)

Susan L. Parish, PhD, MSW, Dean and Professor of Health Sciences

Carmen Sceppa, MD, PhD, Associate Dean for Undergraduate Education

Dean's Office

215 Behrakis Health Sciences Center

617.373.3323

617.373.3030 (fax)

Bouve_College_of_Health_Sciences@northeastern.edu

Undergraduate Office of Student Services

120 Behrakis Health Sciences Center

617.373.3320

617.373.8994 (fax)

bouvestudentservices@northeastern.edu

The programs in Bouvé College of Health Sciences combine experiential and cooperative education opportunities with highly innovative academic curricula that are designed to meet the demand for well-educated health professionals, nurses, and pharmacists. The college seeks to prepare students to become effective clinicians, researchers, and leaders who will enter graduate schools and work in many areas responsible for the delivery of healthcare and the promotion of health of individuals and populations.

There are three schools within the Bouvé College of Health Sciences: the School of Nursing, the School of Pharmacy, and the School of Health Professions, which comprises the health science and physical therapy majors. The college offers students an education in health and health profession fields that features a curriculum of highly relevant and closely integrated basic courses in the physical, biological, behavioral, social, environmental, and health systems sciences; as well as on-site involvement in interprofessional clinical patient care and interdisciplinary translational research; integrated experiential education opportunities in the form of the university's signature cooperative education work program; and a commitment to the search for and advancement of new and progressive concepts, ideas, and philosophies of education and professional practice.

Each of the programs offered by the college is accredited by the appropriate professional entity. The college is a member of the American Association of Colleges of Nursing, the American Association of Colleges of Pharmacy, the American Council of Academic Physical Therapy, and the Council on Education for Public Health.

Academic Requirements

Students are responsible for following the curriculum plan for their respective major, pattern of attendance, and graduation year. Students are responsible for monitoring their own progress through the curriculum by registering for the courses stipulated by their curriculum plan, abiding by course prerequisites, regularly checking their degree audits, and knowing the consequences for unsatisfactory academic progress. Any exceptions to a student's curriculum plan will be determined by protocols established by the program, after consultation with the student's academic advisor.

COLLEGE ACADEMIC STANDARDS—PROFESSIONAL COURSES

Students must receive a grade of C or better in professional courses.

Professional courses are those required courses taught within the major/college as identified by course subject code: EXSC, HLTH, HSCI, NRSRG, PHMD, PHSC, PPTH, and PT.

Courses in the above-listed subjects that are taken as electives are exempt from the C or better rule and the university's minimum satisfactory grade will be accepted. Those courses labeled "**professional elective**" (i.e. certain pharmacy courses), are subject to the C or better requirement.

COLLEGE ACADEMIC STANDARDS—PROFESSIONAL PREREQUISITES

Major	Professional Prerequisite Designation	Minimum Passing Grade
Health Science	BIOL, CHEM, MATH	C–
Nursing	BIOL, CHEM, MATH PSYC 3404	C C
Pharmacy (PharmD, BS PharmSci)	BIOL, CHEM, MATH, PHYS	C
Physical Therapy	BIOL, EXSC, PHYS, PSYC CHEM, MATH	C C–

Courses in the above-listed subjects that are taken as electives are exempt from the C– or higher rule and the university's minimum satisfactory grade will be accepted. Those courses labeled "**professional elective**" (i.e. certain pharmacy courses), are subject to the C or better requirement.

COLLEGE ACADEMIC STANDARDS—ALL OTHER COURSES

The university's minimum passing grade for the course will be accepted. *Note:* The university requires a minimum grade of C for First-Year Writing (ENGW 1111) and Advanced Writing in the Health Professions (ENGW 3306).

PROGRESSION WITHIN BOUVÉ

- First-year students must complete at least 27 semester hours and meet all major prerequisite course requirements to progress to sophomore status.
- To progress into the subsequent year of professional courses, students must have completed all professional prerequisites with the required minimum passing grade as noted in the chart above.
- To progress into the subsequent semester of professional courses, students must have completed all professional courses with a grade of C or better.
- For pharmacy students, failure to earn a satisfactory grade (S) in a co-op will be counted as a professional course failure.
- Students admitted to the preprofessional pharmacy program must receive the minimum passing grade as noted in the chart above for all professional prerequisites, have satisfactorily completed all academic courses in the preprofessional phase of the curriculum, have an overall GPA of 3.000 or higher, and a science prerequisite GPA of 3.000 or higher in order to progress. In addition, in order to progress into the PharmD professional (P1) year, students must demonstrate, through a personal interview, good verbal and written communication skills, understanding of the pharmacy profession, and commitment to patient care, based on criteria set by the Doctor of Pharmacy program. Pharmacy (PharmD) students with a cumulative GPA of 3.200 or less following the fall semester of the sophomore year

may experience a delayed start date for the first co-op (IPPE), as the School of Pharmacy will not submit intern licensure documentation to the Board of Pharmacy until spring grades are verified. Pharmacy (PharmD) students must maintain an overall GPA of 3.000 or higher during the professional years (P1–P4) of the Doctor of Pharmacy program. BS Pharm Sci students must maintain an overall GPA and a science GPA of 3.000 or higher in order to progress.

- Physical therapy students must receive the minimum passing grade as noted in the chart above for all professional prerequisites, have satisfactorily completed all academic courses in the preprofessional phase of the curriculum, have an overall GPA of 3.000 or higher, a science prerequisite GPA of 3.000, and must have completed a minor or its equivalent by the end of the preprofessional phase of the program (physical therapy = summer 1) in order to progress into the professional phase of the program. This requirement is intended to provide students with a robust foundation in the humanities, social sciences, and natural sciences that is required for successful completion of the doctoral program in physical therapy.
- Students who incur an incomplete grade in a prerequisite course may not progress into the subsequent courses(s). Any exceptions will be determined by protocols established by the program, after consultation with the student's academic advisor.

CRITERIA FOR UNIVERSITY ACADEMIC PROBATION

Note: Notation of academic probation will appear on internal records but not on permanent transcripts.

Students in the Bouvé College of Health Sciences will be placed on academic probation effective the following academic semester for any of the reasons noted below:

First-year Students

Students who fail to attain an overall GPA of 1.800 at the end of each semester of their freshman year and/or fail to earn at least 12 semester hours in the semester just completed will be placed on academic probation effective for the following semester.

Upperclass and Transfer Students

Students who fail to attain a minimum cumulative GPA of 2.000 at the end of each semester and/or fail to earn at least 12 semester hours in the semester just completed and/or fail to meet the requirements for good academic standing for their major will be placed on academic probation.

ACADEMIC DISMISSAL FROM MAJOR

Students in the Bouvé College of Health Sciences will be dismissed from their major effective the following academic semester for any of the reasons noted below:

- Failure to earn the minimum required grade in the same course twice.
- For health science, pharmacy, and physical therapy students, failure to earn a grade of C or better in three professional courses, regardless of remediation.

Within the health science program, lecture and clinical/lab components for the same class are considered as one professional course failure.

Within the physical therapy and pharmacy programs, each specific professional course (with separate registration number) will be counted as a separate failure even if content is related.

- For nursing students, failure to earn a grade of C or better in two professional and/or clinical courses, regardless of remediation. Within the nursing program, each specific professional course (with

separate registration number) will be counted as a separate failure even if content is related.

- For physical therapy and pharmacy students, failure to achieve an overall GPA of 3.000 or higher or a science prerequisite GPA of 3.000 or higher by the end of the preprofessional phase of the program (physical therapy = summer 1, semester year two; pharmacy = spring semester, year two) or failure to maintain the required overall 3.000 GPA at any point in the professional phase of the program.
- For nursing, physical therapy, and pharmacy students, changing the expected graduation date more than twice.
- The physical therapy and pharmacy programs monitor and promote the development of professional behaviors in their students in order to ensure appropriate professionalism in the classroom, local and global communities, and clinical settings. Breach of adherence to these standards may result in dismissal from the student's respective program.

Note: Students dismissed from their major but who are otherwise in good standing with the university are allowed to remain at Northeastern University for up to two semesters as a provisional Bouvé student, by the end of which the student is expected to move into a new major. If not moved into a new major by the end of two semesters, the student will be blocked from further registration.

ACADEMIC DISMISSAL FROM UNIVERSITY

Students who remain on probation after two academic semesters may be dismissed from the university. Notation of this academic dismissal action will appear on the permanent transcript.

ACADEMIC APPEALS

Students who believe that they were erroneously, capriciously, or otherwise unfairly treated in an academic or cooperative education decision may petition to appeal that decision. In addition, students may also appeal to the college's Academic Standing Committee to review probation and dismissal cases. Refer to the *Bouvé Undergraduate or Graduate Student Manual*, which details the Bouvé College of Health Sciences Appeals Process, and the *Northeastern University Student Handbook*, which details the University Undergraduate Student Academic Appeals Procedures.

GPA

Bouvé College does not permit the use of a hand-calculated GPA under any circumstances. All grade-point calculations will be performed by the university's standard process.

Communication Sciences and Disorders

Website (<http://www.northeastern.edu/bouve/csd>)

Lorraine A. Book, PhD, CCC-SLP
Interim Chair and Assistant Clinical Professor

226 Forsyth Building
617.373.3698
617.373.2239 (fax)

The Department of Communication Sciences and Disorders (CSD) offers two undergraduate minors.

These flexible minors allow students from various fields of study to enhance their academics with courses related to the field of communication sciences in general, as well as specific courses covering topics such as audiology or speech/language disorders

across the lifespan. Advisors assist students minoring in this area with accommodating their interests, aptitudes, or graduate plans.

The minor in CSD includes courses that offer exposure to a variety of aspects of the CSD field. Students can go on to graduate programs in fields such as applied psychology, linguistics, neuroscience, and education, among others; but the minor does not by itself prepare students for admission to graduate programs in speech-language pathology or audiology. Speech-language pathology and audiology courses are designed to help students develop entry-level competencies that will enable them to function in a preprofessional capacity in educational settings, medical and rehabilitation centers, and private-practice clinics.

The minor in clinical speech-language pathology and audiology (SLPA) seeks to prepare students for admission into a graduate program in speech-language pathology or audiology. Speech-language pathologists and audiologists (which requires graduate education to practice) are involved with the evaluation and treatment of, and counseling and research in, human communication and its disorders. They provide clinical services to a full range of communicatively impaired individuals, from infants through geriatrics. Speech-language pathologists treat disorders such as developmental language and articulation disorders; voice and resonance problems; stuttering; pediatric and adult swallowing disorders; and language and cognitive impairments due to stroke, head injury, and progressive neurological diseases. Audiologists specialize in the prevention, identification, assessment, and rehabilitation of hearing disorders. Individuals with congenital and acquired hearing impairments are seen for services by audiologists. They prescribe and dispense hearing aids and instruct individuals in the use of amplification.

Communication Sciences and Disorders Minor

The CSD minor consists of one required foundation course taken prior to any core or elective courses, then two core courses and one elective from either the remaining core courses in the list or from a specified set of elective courses that are taught by units other than the Department of CSD. Students may consult with an advisor in the CSD department concerning the current listing of eligible elective courses for the CSD minor.

Clinical Speech-Language Pathology and Audiology Minor

The clinical SLPA minor seeks to prepare students for admission into a graduate program in speech-language pathology or audiology. In particular, students in this minor are on a track that, if supplemented with certain elective choices within their major, would meet all admissions requirements for our department's own MS/SLP (<http://catalog.northeastern.edu/graduate/health-sciences/communication-sciences-disorders/speech-language-pathology-ms>) program.

Students pursuing this minor are advised to consult early and regularly with their academic advisors in order to ensure a timely completion of the combination of their major and the clinical SLPA minor requirements.

Students pursuing this minor who wish to go to graduate school at institutions other than Northeastern are advised to carefully check admissions requirements for those programs.

Programs Minors

- Communication Sciences and Disorders (p. 436)
- Speech-Language Pathology and Audiology (p. 437)

Communication Sciences and Disorders, Minor

The communication sciences and disorders (CSD) minor consists of one required foundation course taken prior to any core or elective courses, then two core courses and one elective from either the remaining core courses in the list or from a specified set of elective courses that are taught by units other than the CSD department. Students may consult with an advisor in the CSD department concerning the current listing of eligible elective courses for the CSD minor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Foundation Course

Code	Title	Hours
Complete one of the following:		4
SLPA 1101	Introduction to Communication Disorders	
SLPA 1555	Communication Disorders in Movies	

Communication Sciences and Disorders Core

Code	Title	Hours
Complete two of the following:		6-8
SLPA 1102	Language Development	
SLPA 1103	Anatomy and Physiology of Speech and Hearing Mechanism	
SLPA 1200	Phonetics	
SLPA 1203	Introduction to Audiology	
SLPA 1205	Speech and Hearing Science	
SLPA 4651	Speech Disorders across the Life Span	
SLPA 5110	Language Disorders across the Life Span	

Electives

Code	Title	Hours
Complete at least one of the following. Additional courses may be needed to complete a minimum of 15 semester hours for the minor.		3-6
AMSL 1101	Elementary ASL 1	
CAEP 3480	Counseling Theories and Practice	
COMM 1112	Public Speaking	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3534		
ENTR 2301	Innovation!	
HLTH 1510	Introduction to Healthcare Ethics	
PHTH 2300	Communication Skills for the Health Professions	
PHTH 2301	Communication Skills for the Health Professions—Global	
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	

Minor Credit Requirement

Minimum of 15 semester hours required in the minor

GPA Requirement

2.000 GPA required in the minor

Speech-Language Pathology and Audiology, Minor

The clinical SLPA minor seeks to prepare students for admission into a graduate program in speech-language pathology or audiology. In particular, students in this minor are on a track that, if supplemented with certain elective choices within their major, would meet all admissions requirements for our department's own MS/SLP (<http://catalog.northeastern.edu/graduate/health-sciences/communication-sciences-disorders/speech-language-pathology-ms>) program.

The clinical SLPA minor consists of one required foundation course taken prior to core courses, then five department-specific SLPA core courses.

Students pursuing this minor are advised to consult early and regularly with their academic advisors in order to ensure a timely completion of the combination of their major and the clinical SLPA minor requirements.

Students pursuing this minor who wish to go to graduate school at institutions other than Northeastern are advised to carefully check admissions requirements for those programs.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Foundation Course

Code	Title	Hours
Complete one of the following:		4
SLPA 1101	Introduction to Communication Disorders	
SLPA 1555	Communication Disorders in Movies	

Speech-Language Pathology and Audiology Core

Code	Title	Hours
SLPA 1102	Language Development	3-4
SLPA 1103	Anatomy and Physiology of Speech and Hearing Mechanism	3-4
SLPA 1200	Phonetics	3-4
SLPA 1203	Introduction to Audiology	3-4
SLPA 1205	Speech and Hearing Science	3-4

GPA Requirement

2.000 GPA required in the minor

Health Sciences

Website (<http://www.northeastern.edu/bouve/health-sciences>)

Shan Mohammed, MD, MPH

Associate Clinical Professor and Interim Chair

316 Robinson Hall
617.373.3666
617.373.2968 (fax)

Alicia Bouchard, Administrative Coordinator,
al.bouchard@northeastern.edu

The Department of Health Sciences offers a BS degree program in health science; a BS in health science/MPH (Master of Public Health); and minors in exercise science, global health, nutrition, and health science.

The health science major is designed to provide students with an integrated understanding of the natural and social sciences, critical reasoning, and the determinants of global and population health. The competencies that students acquire over their tenure in the Department of Health Sciences provide a solid foundation that prepares students to enter graduate and professional programs in medicine, dentistry, law, veterinary medicine, physician assistant, exercise science, social work, and public health. Health science students also distinguish themselves as particularly well prepared to enter the workforce in many health-related areas because they understand the critical importance of the context in which healthcare is delivered. Health science graduates can be found in leadership roles in various health-related organizations, including hospitals, government and other public health agencies, community-based organizations, and in the pharmaceutical and insurance industries.

The health science curriculum integrates learning in the natural sciences, social sciences, and the liberal arts. All health science students have the option to complete the program with or without a co-op experience. Health science students take courses that introduce them to social determinants of health and wellness and to the ways in which healthcare systems and policies foster—or impede—health and wellness. Our curriculum offers students an opportunity to develop an understanding of public health, health policy and administration, quality-of-care improvement, research methods, and evidence-based healthcare. The curriculum includes electives designed to enrich students' intellectual lives and an opportunity to identify specific areas of interest. Students may use electives to explore a formal minor that complements their health science studies or take prerequisite courses for graduate programs. The entire academic experience culminates in a sequence of capstone courses during the senior year, intended to provide students with a structured opportunity to integrate the knowledge and skills acquired in prior courses, research, and experiential activities into a significant capstone project.

Programs

Bachelor of Science (BS)

- Health Science (p. 438)

Combined Majors

- Data Science and Health Science (p. 355)
- Health Science and Business Administration (p. 246)
- Environmental Engineering and Public Health (p. 394)

Minors

- Health Science (p. 446)
- Health, Humanities, and Society (p. 446)
- Healthcare System Operations (p. 432)
- Exercise Science (p. 447)
- Global Health (p. 448)
- Nutrition (p. 448)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 467)

Health Science, BS

The health science major offers students a solid academic and experiential foundation that positions them well to pursue graduate and professional school training in the following programs:

- Medicine
- Dentistry
- Veterinary medicine
- Public health
- Physician assistant studies
- Social work

The health science major is also designed for students who are seeking a strong foundation for a career in health administration and in community-based health promotion and public health.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Public Health Core

Code	Title	Hours
YEAR 1		
PHTH 1260	The American Healthcare System	4
YEARS 2 and 3		
PHTH 2210 and PHTH 2211	Foundations of Biostatistics and Recitation for PHTH 2210	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
HLTH 5450	Healthcare Research	4
PHTH 4540	Health Education and Program Planning	4
FINAL YEAR		
PHTH 4120	Global Perspectives on Discrimination and Health	4

Health Science Courses

Code	Title	Hours
YEAR 1		
HSCI 1000	College: An Introduction	1
YEAR 2 OR 3		
HSCI 2000	Professional Development for Bouvé Co-op	1
FINAL YEAR		

HSCI 4700	Health Science Capstone Introduction	0
HSCI 4720	Health Science Capstone—Service	4
or HSCI 4730	Health Science Capstone—Research	

Selectives

Code	Title	Hours
Complete at least three courses from the groups listed below with at least two in one category. At least one of them must be at 2000 level or higher.		12

Society and Health		
PHTH 1120	Society and Health	
SOCL 1120	Society and Health	
PHTH 1270	Introduction to Global Health	
SOCL 3441	Sociology of Health and Illness	
HLTH 5280	The (in)Visibility of (dis)Ability in Society	
PHTH 5234	Economic Perspectives on Health Policy	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHTH 5228	Advances in Measuring Behavior	
ANTH 2365	Sport, Culture, and Society	
ANTH 4580	Special Topics in Anthropology	
SOCL 1246	Environment and Society	
SOCL 1295	Drugs and Society	
SOCL 2303	Gender and Reproductive Justice	
SOCL 3485	Environment, Technology, and Society	
SOCL 4523	Sexualities	
Policy and Administration		
PHTH 4511	Healthcare Management	
PHTH 4515	Critical Issues in Health and Public-Health Policy	
ENTR 2206	Global Social Enterprise	
ORGB 3201	Organizational Behavior	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
PHTH 5214	Environmental Health	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
CRIM 3040	Psychology of Crime	
SOCL 1241	Sociology of Violence	
Physical Activity and Nutrition		
HSCI 1105	Human Nutrition	
or HSCI 1106	Contemporary Issues in Nutrition	
or HSCI 1107	Nutrition Service Learning	
EXSC 1120	Introduction to Exercise, Fitness, and Health	
EXSC 4500 and EXSC 4501	Exercise Physiology 1 and Lab for EXSC 4500	
EXSC 5200	Cardiopulmonary Physiology	
EXSC 5220	Advanced Exercise Physiology	
COMM 3201	Health Communication	

Digital Health

IS 2000	Principles of Information Science
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500
HINF 5200	Theoretical Foundations in Personal Health Informatics
HINF 5300	Personal Health Interface Design and Development
HINF 5101	Introduction to Health Informatics and Health Information Systems

Research

PHTH 5202	Introduction to Epidemiology
PHTH 5224	Social Epidemiology
PHTH 5214	Environmental Health

Supporting Courses

Code	Title	Hours
YEAR 1		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
MATH 1241	Calculus 1	4
PSYC 1101	Foundations of Psychology	4
YEAR 2 OR 3		
PHIL 1165	Moral and Social Problems in Healthcare	4

Writing Requirements

Code	Title	Hours
YEAR 1		
ENGW 1111	First-Year Writing	4
YEAR 2 OR 3		
ENGW 3306	Advanced Writing in the Health Professions	4

Electives

Code	Title	Hours
	Complete 10 general electives	40

Health Science Major GPA Requirement

A minimum 2.000 GPA is required

Program Requirement

133 total semester hours required

Plan of Study

Five Years, Two Co-ops in Summer 2/Fall

This is a sample plan of study.

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSCI 1000	1	PHTH 1260	4	Vacation	0	Vacation	0
PSYC 1101	4	BIOL 1113	4				
BIOL 1111	4	BIOL 1114	1				
BIOL 1112	1	CHEM 1214	4				
MATH 1241	4	CHEM 1215	1				
CHEM 1211	4	CHEM 1216	0				
CHEM 1212	1	ENGW 1111	4				
CHEM 1213	0						
		19			18		
					0		
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHTH 2350	4	PHTH 2515	4	Vacation	0	Co-op	0
PHTH 2210	4	HSCI 2000	1				
PHTH 2211	0	HLTH 1200 (or elective)	2				
Elective	4	HLTH 1201	1				
Elective	4	Elective	4				
		Elective	4				
		16			16		
					0		
						0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHIL 1165	4	Vacation	0	Vacation	0
		Selective	4				
		ENGW 3306	4				
		PHTH 2300	4				
		0			16		
					0		
						0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HLTH 5450	4	Co-op	0	Co-op	0	Vacation	0
PHTH 4540	4						
Elective	4						
Selective	4						
		16			0		
					0		
						0	

Year 5

Fall	Hours	Spring	Hours		
PHTH 4120	4	HSCI 4720 or 4730	4		
HSCI 4700	0	Elective	4		
Elective	4	Elective	4		
Selective	4	Elective	4		
Elective	4				
		16			16

Total Hours: 133

Data Science and Health Science, BS

The health science and computer science combined major offers a solid academic and experiential foundation integrating studies in health administration, computer science, mathematics, and statistics. This program reflects the impact of data in modern healthcare and prepares

students for success in careers in health administration, community-based health promotion, public health, and big data analysis.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Data Science Requirements

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Discrete Structures

A grade of C- or higher is required:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
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Computer Science Foundation

A minimum grade of C- must be earned in CS 2500 and CS 2510.

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 3500	Object-Oriented Design	4
CS 3200	Database Design	4

Information Science Requirement

IS 4300	Human Computer Interaction	4
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Data Science Foundations

DS 4100	Data Collection, Integration, and Analysis	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4

Supporting Courses for Data Science

Code	Title	Hours
MATH 1341 or MATH 1241	Calculus 1 for Science and Engineering Calculus 1	4

Data Science Writing Requirement

Code	Title	Hours
ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4

Advanced Writing in the Disciplines

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Health Science Requirements

Code	Title	Hours
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Public Health Core

PHTH 1260	The American Healthcare System	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 4540	Health Education and Program Planning	4

Supporting Courses for Health Science

Code	Title	Hours
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Research Methods

Complete one of the following:		4
HLTH 5450	Healthcare Research	
IS 4800	Empirical Research Methods	

Statistics

Complete one of the following:		4
PHTH 2210	Foundations of Biostatistics	
PSYC 2320	Statistics in Psychological Research	
ECON 2350	Statistics	
ENVR 2500	Biostatistics	
MATH 3081	Probability and Statistics	

Philosophy

Complete one of the following:		4
PHIL 1145	Technology and Human Values	
PHIL 1165	Moral and Social Problems in Healthcare	

Life Sciences Core

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
PSYC 1101	Foundations of Psychology	4

Integrative Requirement

Code	Title	Hours
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Upper-Division Elective

Complete one from the following:		4
CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		
PHTH 4000 or higher		

HSCI 4000 or higher

Integrative Course		
Code	Title	Hours
DS 4900	Data Science Senior Project	4

Required General Electives

Code	Title	Hours
Complete three general electives.		12

Data Science GPA Requirement

Minimum 2.000 GPA required in all computer, data, and information science courses.

Program Requirement

136 semester hours required

Health Science and Business Administration, BS

The combined major in Health Science and Business Administration provides students at Northeastern with an opportunity to study a curriculum that is synergetic with the growing field of health care. This academic combination will provide students with the knowledge and expertise needed to enter a multitude of careers upon graduation. The degree will allow students the unique opportunity to better understand the business side of the health care industry in Massachusetts, which is home to some of the best hospitals and medical research companies in the country. The field is compatible with all the undergraduate concentrations in the School of Business and prepares students to enter the workforce after graduation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Health Science Requirements

Code	Title	Hours
Public Health Core		
PHTH 1260	The American Healthcare System	4
PHTH 2300	Communication Skills for the Health Professions	4
PHTH 2350	Community and Public Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 4540	Health Education and Program Planning	4
HLTH 5450	Healthcare Research	4
Supporting Courses for Health Science		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5

BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
PSYC 1101	Foundations of Psychology	4

Business Administration Requirements

Code	Title	Hours
Required Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4

Business Electives		
Complete two of the following:		8
MISM 2301	Management Information Systems	
MKTG 2201	Introduction to Marketing	
SCHM 2301	Supply Chain and Operations Management	
ORGB 3201	Organizational Behavior	

Supporting Courses for Business		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4

Business Concentration

Complete one of the following concentrations. Requirements for the concentrations are listed below. (p. 247)

- Accounting
- Entrepreneurship and Innovation
- Finance
- Management
- Management Information Systems
- Marketing
- Supply Chain Management

Supporting Courses

Code	Title	Hours
Introduction to College		
HSCI 1000 or BUSN 1102	College: An Introduction or Personal Skill Development for Business	1
Calculus		
MATH 1231 or MATH 1241	Calculus for Business and Economics or Calculus 1	4
Statistics		
PHTH 2210 or MGSC 2301	Foundations of Biostatistics or Business Statistics	4
Co-op Preparation		
Complete one of the following:		4-5
BUSN 1101 and BUSN 1103	Introduction to Business and Professional Development for Business Co-op	

HSCI 2000	Professional Development for Bouvé Co-op	
Capstone		
Complete one of the following:		4
STRT 4501	Strategy in Action	
HSCI 4720	Health Science Capstone—Service (Prerequisite course HSCI 4700)	
HSCI 4730	Health Science Capstone—Research (Prerequisite course HSCI 4700)	

Integrative Requirement

Code	Title	Hours
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	4

Business GPA Requirement

A minimum 2.000 GPA is required in all business courses.

Program Requirement

132 total semester hours required

Business Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:		4
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ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	

FINA 4312	Issues in Corporate Governance
FINA 4320	International Financial Management
FINA 4410	Valuation and Value Creation
FINA 4412	Personal Financial Planning
FINA 4420	Mergers and Acquisitions
FINA 4512	Financial Risk Management
FINA 4514	Investment Banking
FINA 4516	Real Estate Finance
FINA 4524	Credit Analysis
FINA 4526	Core Topics in Alternative Investments
FINA 4983	Special Topics in Finance
FINA 4602	Turnaround Management
FINA 4604	Fixed-Income Securities
FINA 4608	Advanced Financial Strategy
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		

Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Environmental Engineering and Health Science, BS

This intercollege combined major is designed for students who would like to explore their interest in the health sciences while earning the benefit of a Bachelor of Science degree in

environmental engineering. The combined major reflects the respective departmental thrusts in environmental health and sustainable resource engineering to create awareness about the complex relationship between the environment and human health, prepare professionals in this growing area capable of providing engineering solutions to current and emerging topics related to environmental engineering and health sciences, and maintain healthy environmental systems by applying and developing techniques to reduce exposure to health hazards. This program combines the content of two majors to allow students to learn the breadth and depth of the convergence between public health and environmental engineering.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in major (CIVE) courses

Engineering

Complete 65 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CIVE 2221 and CIVE 2222	Statics and Strength of Materials and Recitation for CIVE 2221	4
CIVE 2260 and CIVE 2261	Civil Engineering Materials and Materials and Measurements Lab	5
CIVE 2331	Fluid Mechanics	4
CIVE 2334	Environmental Engineering 1	4
CIVE 2335	Environmental Engineering Chemistry	4
CIVE 3430	Engineering Microbiology and Ecology	4
CIVE 3435	Environmental Pollution Fate and Transport	4
CIVE 4534 and CIVE 4535	Environmental Engineering 2 and Lab for CIVE 4534	4
CIVE 4765	Senior Design Project—Environmental	5
CIVE 5300	Environmental Engineering Laboratory	4
GE 3300	Energy Systems: Science, Technology, and Sustainability	4
Environmental Engineering Technical Electives		
Complete 12 semester hours from the following:		12
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	

CIVE 5536	Hydrologic Engineering	
CIVE 5699	Special Topics in Civil Engineering (Groundwater and Contamination)	
CIVE 5699	Special Topics in Civil Engineering (Coastal Dynamic and Design Practice)	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	

Supplemental Credit

1 semester hour from the following course counts toward the engineering requirement:		1
CIVE 3464	Probability and Engineering Economy for Civil Engineering	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CIVE 2000	Introduction to Engineering Co-op Education	1
CIVE 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Supporting Courses: Mathematics/Science

Complete 33 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5

Science Elective (Earth)

Complete one of the following:		4-5
ENVR 1110	Global Climate Change	
ENVR 1112	Environmental Geology	
ENVR 1120	Oceans and Coasts	
ENVR 1200	Dynamic Earth	
ENVR 1202	History of Earth and Life	
ENVR 2310	Earth Materials	

ENVR 3125	Global Oceanic Change	
Supplemental Credit		
3 semester hours from the following course count toward the mathematics/science requirement:		3
CIVE 3464	Probability and Engineering Economy for Civil Engineering	
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Writing Requirement and NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Health Sciences Major Requirement

Code	Title	Hours
HLTH 5450	Healthcare Research	4
PHTH 4120	Global Perspectives on Discrimination and Health	4
PHTH 5214	Environmental Health	3
PHTH 1260	The American Healthcare System	4
PHTH 2210	Foundations of Biostatistics	4
PHTH 2350	Community and Public Health	4
PHTH 2414	Environmental Health	4
PHTH 2515	Healthcare Policy and Administration	4
PHTH 4540	Health Education and Program Planning	4

Integrative Course

Code	Title	Hours
CIVE 4765	Senior Design Project—Environmental	5

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

145 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1241	4	MATH 1342	4	PHTH 1260	4	Vacation	
CHEM 1151 and CHEM 1153	4	GE 1502	4	MATH 2321	4		
GE 1501	4	PHYS 1151 and PHYS 1152 and PHYS 1153	5				
GE 1000	1	PHTH 2210	4				
ENGW 1111	4						
		17		17		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CIVE 2334	4	PHTH 2414	4	PHTH 2350	4	Co-op	
CIVE 2260 and CIVE 2261	5	CIVE 2000	1	MATH 2341	4		
CIVE 2221 and CIVE 2222	4	CIVE 2331	4				
PHTH 2515	4	CIVE 2335	4				
		CIVE 3430	4				
		17		17		8	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CIVE 3435	4	GE 3300	4	Co-op	
		Technical elective	4	Science elective	4		
		PHTH 4540	4				
		HLTH 5450	4				
		0		16		8	
						0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CIVE 3000	1	Vacation		Co-op	
		CIVE 3464	4			ENGW 3302	4
		Technical elective	4				
		CIVE 4534 and CIVE 4535	4				
		PHTH 4120	4				
		0		17		0	
						4	
Year 5							
Fall	Hours	Spring	Hours				
Co-op		Technical elective	4				
		CIVE 5300	4				
		PHTH 5214	3				

CIVE 4765	5
0	16

Total Hours: 145

Health Science, Minor

The minor in health science is designed for undergraduate students from a variety of disciplines across the university who wish to expand and apply their understanding in key areas of public health including healthcare research; policy; management and delivery; epidemiology; informatics; communications; and contemporary issues in food policy, nutrition, health disparities, disease prevention, and disability in society. The minor is comprised of five courses, two of which are required (The American Healthcare System (PHTH 1260) and Community and Public Health (PHTH 2350)) to equal 20 credits in total. Health science faculty will consult with students to assist with elective selections relevant to their interests.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
PHTH 1260	The American Healthcare System	4
PHTH 2350	Community and Public Health	4

Elective Courses

Code	Title	Hours
Complete three of the following:		9-12

EXSC 1120	Introduction to Exercise, Fitness, and Health	
HSCI 1106	Contemporary Issues in Nutrition	
PHTH 1120	Society and Health	
PHTH 2300	Communication Skills for the Health Professions	
PHTH 4120	Global Perspectives on Discrimination and Health	
PHTH 4511	Healthcare Management	
PHTH 4515	Critical Issues in Health and Public-Health Policy	
PHTH 5202	Introduction to Epidemiology	
PHTH 5228	Advances in Measuring Behavior	
PHTH 5230	Global Health	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	
PHTH 5440	Community-Based Participatory Research: Environmental Health	
HSCI 5230	Clinical Nutrition Applications in Health and Disease	
HLTH 5450	Healthcare Research	
HLTH 5280	The (in)Visibility of (dis)Ability in Society	

GPA Requirement

2.000 GPA required in the minor

Health, Humanities, and Society, Minor

The health, humanities, and society minor is designed for students who would like to learn how to think capaciously and creatively about health using the rigorous, precise, and flexible skills trained by the social sciences and the humanities. The social sciences teach students to think about the social, economic, and political factors that structure health conditions and outcomes in particular societies, while the humanities train students to navigate the complexities of interpersonal interaction and their ethical implications, to relate the micro to the macro and texts to contexts, to historicize encounters, to communicate accurately and effectively across a variety of media, and to engage in creative analytical thinking about healthcare. The landscape of healthcare is quickly changing, and this training will equip students well not only for the diverse forms of health work that exist today, but for as yet unimaginable varieties of health-related work in the future.

This minor is structured around the particular competencies that the social sciences and humanities train. Those competencies are narrative and historical perspective, critical attention and observation, ethics and judgment, performance and creativity, and social and structural proficiency. Rather than adopting the more traditional approach of connecting particular skills to particular disciplines (say, narrative to literature and observation to art history), this minor builds from discipline-specific health knowledge while training students to think across disciplines. Thus, it will not be unusual for students to find a single course addressing multiple competencies or to take courses in different disciplines that address the same competency from distinct but complementary perspectives.

This minor is housed in the Humanities Center of the College of Social Sciences and Humanities in partnership with the Bouvé College of Health Sciences.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

No more than two courses, in addition to the introductory course, may be taken under the 2000 level.

Code	Title	Hours
Introductory Course		
INSH 1300	Introduction to Health and Humanities	4
Humanities Requirement		
Complete two of the following:		8
ENGL 2770	Writing to Heal	
ENGL 3700	Narrative Medicine	
ENGL 4710	Capstone Seminar	
ENGL 4040	Topics in 19th-Century Literatures	
HIST 3322	The History of Medicine in North America	
PHIL 1165	Moral and Social Problems in Healthcare	
PHIL 1271	Sex in Judaism, Christianity, and Islam	

PHIL 1295	Religious Perspectives on Health and Healing
WMNS 1225	Gender, Race, and Medicine
Social Sciences Requirement	
Complete two of the following: 8	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4580	Special Topics in Anthropology
ECON 1230	Healthcare and Medical Economics
HLTH 5280	The (in)Visibility of (dis)Ability in Society
PHTH/SOCL 1120	Society and Health
PHTH 1270	Introduction to Global Health
PHTH 2300	Communication Skills for the Health Professions
PHTH 4120	Global Perspectives on Discrimination and Health
PHTH 5202	Introduction to Epidemiology
PHTH 5234	Economic Perspectives on Health Policy
SOCL 1295	Drugs and Society
SOCL 2303	Gender and Reproductive Justice
SOCL 3441	Sociology of Health and Illness

GPA Requirement

2.000 GPA required in the minor

Healthcare System Operations, Minor

The objective of the minor in healthcare system operations is to prepare students to apply industrial and systems engineering methods in healthcare applications. Distinct from other service industries, healthcare systems are characterized by extensive complexities driven by communication between and interdependencies among multiple actors, and the need to simultaneously address multiple competing objectives pertaining to economic, quality-driven, individual-driven, and population-driven goals. This minor will benefit students by highlighting the unique features of this industry and methods for addressing its unique challenges to engineer improvements to the design, operation, and management of healthcare systems.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

At most, one course from the minor may be counted toward major requirements.

Code	Title	Hours
Required Courses		
IE 5617	Lean Concepts and Applications	4
IE 5400	Healthcare Systems Modeling and Analysis	4
or IE 3500	Introduction to Healthcare Systems Engineering	

PHTH 1260	The American Healthcare System	4
Electives		
Complete one of the following:		4
PHTH 4511	Healthcare Management	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
NRSRG 5121	Epidemiology and Population Health	
IE 5374	Special Topics in Industrial Engineering (System Dynamics in Healthcare)	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	

GPA Requirement

2.000 GPA required in the minor

Exercise Science, Minor

The minor in exercise science is for undergraduate students from any discipline wishing to expand their understanding in this area. Exercise science is a discipline that examines the short- and long-term responses to exercise and benefits of exercise training for healthy persons, as well as persons with chronic diseases such as heart disease, pulmonary diseases, diabetes, and obesity. Through this minor, undergraduate students have an opportunity to broaden their understanding of exercise and physical activity in health promotion, disease prevention, and interventions. Students who elect a minor in exercise science may then apply to the Master of Science in Exercise Science upon graduation.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Exercise Science Requirements

A minimum grade of C is required in all courses taken toward the minor.

Required Courses

Code	Title	Hours
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	5
BIOL 1119 and BIOL 1120	Integrated Anatomy and Physiology 2 and Lab for BIOL 1119	5
EXSC 4500 and EXSC 4501	Exercise Physiology 1 and Lab for EXSC 4500	5

Focus

Complete either the cardiovascular focus (open to all students) or the musculoskeletal focus (open to physical therapy students only):

Code	Title	Hours
Cardiovascular Focus—Open to All Students		
EXSC 5200	Cardiopulmonary Physiology	3
EXSC 5220	Advanced Exercise Physiology	3
Musculoskeletal Focus—Open to Physical Therapy Students Only		

EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease	3
PT 5133 and PT 5134	Kinesiology and Lab for PT 5133	4

GPA Requirement

2.000 GPA required in the minor

Global Health, Minor

The area of global health has become a critical field of study across and within diverse disciplines because of the cross-border and cross-national implications of health-related risks for national security, commerce, transportation, and healthcare delivery itself. In collaboration with the College of Social Sciences and Humanities, the minor in global health is designed to provide undergraduate students an opportunity to explore and discuss the implications with an interdisciplinary lens. The minor is comprised of five courses: two foundation and core courses, three electives, and a global health experience to be approved by the global health minor advisor.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
If both are taken, the additional course may count as an elective.		
Complete one of the following:		4
PHTH 2350	Community and Public Health	
AFRS 1270 or PHTH 1270	Introduction to Global Health	

Core Courses

Code	Title	Hours
Complete one of the following. If additional courses are taken, they may be used as electives.		
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	4
HUSV 4945	Leadership and International Program Development	
PHTH 4120	Global Perspectives on Discrimination and Health	
PHTH 5202	Introduction to Epidemiology	
PHTH 5230	Global Health	

Elective Courses

Code	Title	Hours
Complete three courses from the following areas. Only two courses from any one area may count toward the minor electives. No more than two required courses in the student's major may count toward the minor electives. At least one of the minor electives must be at the 3000-level or above.		
Area 1: Community and Public Health		
PHTH 1261	Comparative Healthcare Systems	12

PHTH 2301	Communication Skills for the Health Professions—Global
PHTH 4540	Health Education and Program Planning
AFRS 4939	Community Health, Culture, and Development in Kenya

Area 2: Biology of Health and Disease

BIOL 1141	Microbes and Society
ENVR 1110	Global Climate Change

Area 3: Society and Cultural Health/Area Studies

PHIL 1165	Moral and Social Problems in Healthcare
ECON 1230	Healthcare and Medical Economics
LACS 1220	Latino, Latin American, and Caribbean Studies
ANTH 4350	Ethnography of Southeast Asia
ANTH 4510	Anthropology of Africa
ANTH 4515	Culture and Politics in Modern India
MGMT 3330	Developing Leaders for Global Sustainability
HIST 3322	The History of Medicine in North America

Area 4: Globalization and Development

POLS 1160	International Relations
ECON 1291	Development Economics
LPSC 2302	Global Human Rights: A Social and Economic Perspective
CRIM 1400	Human Trafficking
HLTH 1510	Introduction to Healthcare Ethics

Global Health Experience

Complete a global health experience that has been approved by the global health minor advisor.

Recommended

Competency in another language other than English is recommended.

GPA Requirement

2.000 GPA required in the minor

Nutrition, Minor

The minor in nutrition is designed for undergraduate students from a variety of disciplines across the university who wish to expand and apply their understanding in key concepts of nutrition and how they intersect with public health, clinical applications, food policy, behavioral counseling, or health communication.

The minor is comprised of five courses. It requires a foundational course in Human Nutrition (HSCI 1105) that instructs students in the basic principles of human nutrition. Students expand foundational concepts in additional required courses to apply knowledge of nutrition in clinical settings and to public health initiatives. Following the initial core courses, students complete two elective courses, at least one at 3000 level or higher, developing deeper knowledge and specific professional skills.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
HSCI 1105	Human Nutrition	4
HSCI 2500	Public Health Nutrition in the Community	4
HSCI 2350	Advanced Nutrition in Health and Disease	4

Supporting Courses

Code	Title	Hours
Complete two of the following. At least one elective must be at the 3000 level or above: 7-8		
HSCI 1106	Contemporary Issues in Nutrition	
EXSC 1120	Introduction to Exercise, Fitness, and Health	
PSYC 2306	Food, Behavior, and Eating Disorders	
ECON 3404	International Food Economics and Policy	
BIOL 3611	Biochemistry	
CAEP 3480	Counseling Theories and Practice	
COMM 3201	Health Communication	
PHSC 4340	Pharmacology for the Health Professions	
PPUA 5270	Food Systems and Public Policy	

GPA Requirement

2.000 GPA required in the minor

Interdisciplinary

Programs

Minor

Early Intervention, Minor (p. 449)

Early Intervention, Minor

The interdisciplinary concentration in early intervention (EI) is designed for students who enjoy working with very young children and their families. Through course work and practicum experiences, students are prepared to work with infants and toddlers with known disabilities, or those who are at risk for developmental delay, and their families.

This course work can be integrated into the psychology undergraduate degree program, the program in human services, or the physical therapy DNP program, usually taken in the senior year. Students in other programs may petition to include this minor in their course of study.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
CAEP 5150	Early Intervention: Family Systems	3
CAEP 5151	Early Intervention: Infant and Toddler Development, Risk, and Disability	3
CAEP 5152	Early Intervention: Planning and Evaluating Services	3
CAEP 8425	Early Intervention Practicum 1	2
CAEP 8426	Early Intervention Practicum 2	2
SLPA 6335	Early Intervention: Assessment and Intervention	3

GPA Requirement

2.000 GPA required in the minor

Physical Therapy, Movement, and Rehabilitation Sciences

Website (<http://www.northeastern.edu/bouve/physical-therapy>)

Kristen Curry Greenwood, PT, DPT, EdD, MS
Associate Clinical Professor and Interim Chair

301 Robinson Hall
617.373.3908
617.373.3161 (fax)
physicaltherapy@northeastern.edu

The physical therapy program has a long and rich history as one of the oldest accredited programs in the United States, with origins dating back to World War I reconstruction aides. Our mission is to impact the health and well-being of the global community by developing leaders in physical therapy, movement, and rehabilitation sciences through interprofessional experiential education, translational research, and excellence in clinical practice. The cornerstone of our program is experiential learning, which includes cooperative education, simulated patient interactions, engagement with consumer clients, service-learning, clinical research, and international humanitarian opportunities. Through this unique, multifaceted approach to learning we:

- Educate skilled, autonomous doctors of physical therapy who embrace evidence-based practice, are culturally competent, and are equipped to work in a complex global healthcare environment
- Promote professionalism, humanistic values, resourcefulness and innovation, and a commitment to lifelong learning
- Advance scholarship in areas related to physical therapist education and clinical practice to meet the changing needs of a global and technologically advancing world

Features of the Doctor of Physical Therapy Program

The program in physical therapy has three admission points: freshman, change of major, or as a graduate student with a baccalaureate degree in any field. The duration of the program is six years for freshman entry and three and one-half years for transfer or postbaccalaureate entry. The terminal degree is the Doctor of Physical Therapy (DPT). Our entry-level Doctor of Physical Therapy program is one of the few freshman entry programs in the country. Undergraduate students earn a BS in rehabilitation science and progress into the Doctor of Physical Therapy phase of the program. Students do not need to reapply to the DPT phase of the program, provided they meet the academic standards.

Emphasis on Experiential Learning

Our DPT program provides freshman-entry students with one year of cooperative education (six months for graduate-entry students) in addition to the required clinical affiliations necessary for licensure. Through cooperative education, the hallmark of Northeastern University, students are able to integrate semesters of academic study with semesters of cooperative education experiences in hospitals and clinics throughout the country and around the globe. Students may be employed as physical therapy co-ops with increasing responsibilities commensurate with their academic studies or perform other health-related duties.

The curriculum also includes 36 weeks of clinical education under the direct supervision of a licensed physical therapist. We are affiliated with world-class medical centers and clinical sites throughout the United States, providing students with access to master clinicians and clinical scholars. Every effort is made to accommodate individual circumstances, but students should be prepared to travel out of state for two of the three clinical placements. Availability of a car is required, as most sites are not accessible by public transportation. All expenses associated with clinical education, including travel and housing, are the responsibility of the student.

Student Research

Physical therapy students participate in research that is integrated into the curriculum. Students have the opportunity to work with faculty to conduct ongoing research in world-renowned medical centers, in one of the 11 Department of Physical Therapy, Movement, and Rehabilitation Science's labs and centers (e.g., Neuromotor Systems Lab, Lab for Locomotion Research, The ReGameVR Lab, Movement Neuroscience Lab, Rehabilitation and Epidemiology Trainee Program, Occupational Biomechanics and Ergonomics Lab, Neurophysiology Lab, Teaching and Learning Innovation Lab, Musculoskeletal Epidemiology and Biomechanics Lab, Cadaver Lab, and Neuroscience Wet Lab). The outcome is the ability to conduct and present quality research at local and/or national-level conferences.

Global Outreach

Students have multiple opportunities to enrich their education through global outreach and education. Physical therapy students can elect to do a traditional semester-long study abroad, a one-month Dialogue of Civilization, or to go abroad for a cooperative education experience. To date, physical therapy students have worked in Nepal, Peru, Costa Rica, Uganda, and South Africa for their cooperative education experience. In the latter portion of the curriculum, students can participate in short cultural immersion experiences abroad whereby they engage in community service projects under the direction of a physical therapy faculty member or on physical therapy academic exchanges with partner academic institutions.

Ability to Minor in Another Field

Physical therapy undergraduate students work with their academic advisor to develop a schedule to complete a minor in another field such as psychology, exercise science, or a foreign language.

Ability to Concentrate

Once in the program, students may have the ability to acquire additional information in two areas of concentration. The Certificate in Early Intervention (<http://catalog.northeastern.edu/graduate/health-sciences/applied-psychology/early-intervention-graduate-certificate/#programrequirements>) is an interprofessional program that meets the state and national requirements for personnel to work with families, infants, and toddlers with disabilities or who are at risk for developmental

delays. **The concentration in sports performance** prepares the physical therapy student to confidently pursue a sports physical therapy position working with athletes of all ages in a variety of settings. In both areas, students take additional course work, focused on research and clinical rotations that expand upon the entry-level physical therapy curriculum.

Progression in the Program

To progress in the program, students must maintain acceptable standards of scholarship and academic performance as stated in the academic requirements section of this catalog. Students must develop appropriate motor skills, professional behaviors, and emotional maturity. The program in physical therapy is accredited by the Commission on Accreditation in Physical Therapy Education of the American Physical Therapy Association.

Graduates of the Doctor of Physical Therapy program are eligible to sit for the Physical Therapy Licensure Examination.

Programs

Bachelor of Science

- Rehabilitation Studies (p. 450)

Doctor of Physical Therapy, DPT

- Physical Therapy (p. 452)

Rehabilitation Studies, BS

The Department of Physical Therapy, Movement, and Rehabilitation Sciences offers a four-year degree program leading to the Bachelor of Science in Rehabilitation Studies (BSRS). The program is designed to prepare students for careers in entry-level positions in the healthcare industry or to prepare graduates for admission into advanced degree (MS, PhD, PA, DPT) programs in the healthcare field. The BSRS does not qualify or prepare the graduate to sit for the physical therapy licensure exam. This program is open to students already enrolled in the Doctorate of Physical Therapy (DPT) program at Northeastern University who choose to opt out of pursuing licensure for direct patient care in the practice of physical therapy for a future career that is grounded in healthcare. The transition of a student from the DPT program to the BSRS program is seamless because the course work for the first three years of the six-year DPT curriculum is identical to the BSRS curriculum. See "Changing Majors (p. 32)" for more information.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

The NUpath requirement Differences and Diversity (DD) is not explicitly satisfied by required courses. Students are responsible for satisfying this requirement with an open elective.

Major Requirements

Code	Title	Hours
YEAR 1		
PT 1000	College: An Introduction	1
YEAR 2		
PT 2000	Professional Development Co-op	1
PT 5101 and PT 5102	Foundations of Physical Therapy and Lab for PT 5101	4
YEAR 3		
PT 5145	Introduction to the Healthcare System	2
PT 5131 and PT 5132	Gross Anatomy and Lab for PT 5131	5
PT 5133 and PT 5134	Kinesiology and Lab for PT 5133	4
PT 5160 and PT 5161	Psychosocial Aspects of Healthcare and Psychosocial Aspects of Healthcare Seminar	4
EXSC 4500	Exercise Physiology 1	4
PT 5140 and PT 5141	Pathology and Recitation for PT 5140	4
PT 5138 and PT 5139	Neuroscience and Lab for PT 5138	5
HLTH 5450 and HLTH 5451	Healthcare Research and Recitation for HLTH 5450	4
YEAR 4		
PT 5227	Physical Therapy Project 1	3
PHSC 4340	Pharmacology for the Health Professions	4
PT 5150 and PT 5151	Motor Control, Development, and Learning and Lab for PT 5150	5

Supporting Courses

Code	Title	Hours
YEAR 1		
MATH 1241	Calculus 1	4
PSYC 1101	Foundations of Psychology	4
PSYC 3404	Developmental Psychology	4
CHEM 1101 and CHEM 1102 and CHEM 1103	General Chemistry for Health Sciences and Lab for CHEM 1101 and Recitation for CHEM 1101	5
CHEM 1104 and CHEM 1105 and CHEM 1106	Organic Chemistry for Health Sciences and Lab for CHEM 1104 and Recitation for CHEM 1104	5
YEAR 2		
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	5
BIOL 1119 and BIOL 1120	Integrated Anatomy and Physiology 2 and Lab for BIOL 1119	5
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	5
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	5
MATH 2280	Statistics and Software	4
COOP 3945	Co-op Work Experience	0

Writing Requirements

Code	Title	Hours
YEAR 1		
ENGW 1111	First-Year Writing (a grade of C or higher is required)	4
YEAR 2		
ENGW 3306	Advanced Writing in the Health Professions (a grade of C or higher required)	4

Program Requirement

128 total semester hours required

**Plan of Study
Four Years, One Co-op****Year 1**

Fall	Hours	Spring	Hours	Summer	Hours	Summer	Hours
				1		2	
PSYC 1101	4	CHEM 1104	4	Vacation	0	Vacation	0
CHEM 1	4	CHEM 1	1				
CHEM 1102	1	CHEM 1106	0				
CHEM 1	0	PSYC 3 ²	4				
MATH 1241	4	Elective	4				
PT 100C	1	Elective	4				
ENGW 1111	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer	Hours	Summer	Hours
				1		2	
MATH 2280	4	Elective	4	ENGW 3306	4	Co-op	0
BIOL 11	4	BIOL 11	4	Elective	4		
BIOL 1118	1	BIOL 1120	1				
PHYS 1 ¹	4	PHYS 1 ¹	4				
PHYS 1146	1	PHYS 1148	1				
Elective	4	PT 200C	1				
		PT 5101	3				
		PT 5102	1				
	18		19		8		0

Year 3

Fall	Hours	Spring	Hours	Summer	Hours	Full Semester	Hours
Co-op	0	HLTH 5450	4			PT 5140	4
		PT 5131	4			PT 5141	0
		PT 5132	1			PT 5133	3
		EXSC 4 ²	4			PT 513 ²	1
		PT 5160	3			PT 5145	2
		PT 5161	1			PT 513 ³	4
						PT 5139	1
	0		17				15

Year 4

Fall	Hours	Spring	Hours
PT 5227	3	Elective	4
PT 515C	4	Elective	4

PT 5151	1		
PHSC 4:	4		
Elective	4		
	16	8	

Total Hours: 136

Physical Therapy, DPT

The Doctor of Physical Therapy (DPT) degree is a professional doctoral degree offered by the department that leads to professional licensure in physical therapy.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

The NUPath requirement Differences and Diversity (DD) is not explicitly satisfied by required courses. Students are responsible for satisfying this requirement with an open elective.

Physical Therapy Major Requirements

A 3.000 GPA and a 3.000 GPA in science prerequisites are required at the end of Summer 1 of the second year to progress into the professional phase of the program.

Code	Title	Hours
YEAR 1		
PT 1000	College: An Introduction	1
YEAR 2		
PT 2000	Professional Development Co-op	1
PT 5101 and PT 5102	Foundations of Physical Therapy and Lab for PT 5101	4
YEAR 3		
PT 5131 and PT 5132	Gross Anatomy and Lab for PT 5131	5
PT 5133 and PT 5134	Kinesiology and Lab for PT 5133	4
PT 5160 and PT 5161	Psychosocial Aspects of Healthcare and Psychosocial Aspects of Healthcare Seminar	4
EXSC 4500	Exercise Physiology 1	4
PT 5140	Pathology	4
PT 5138 and PT 5139	Neuroscience and Lab for PT 5138	5
HLTH 5450 and HLTH 5451	Healthcare Research and Recitation for HLTH 5450	4
PT 5500	Pharmacology for Physical Therapy	2
YEAR 4		

PT 5145	Introduction to the Healthcare System	2
PT 5450	Introduction to Therapeutic Activities	2
PT 5503 and PT 5504	Cardiovascular and Pulmonary Management and Lab for PT 5503	5
PT 5515 and PT 5516	Integumentary Systems and Advanced Modalities and Lab for PT 5515	3
PT 5540	Clinical Integration 1: Evidence and Practice	2
PT 5150 and PT 5151	Motor Control, Development, and Learning and Lab for PT 5150	5
PT 6243 and PT 6244	Health Education, Promotion, and Wellness and Recitation for PT 6243	3

YEAR 5

PT 5227	Physical Therapy Project 1	3
PT 5209 and PT 5210	Neurological Rehabilitation 1 and Lab for PT 5209	5
PT 6221 and PT 6222	Neurological Rehabilitation 2 and Lab for PT 6221	5
PT 5229	Physical Therapy Project 2	2
PT 5226	Physical Therapy Professional Seminar 2	2
PT 5230	Pediatric and Geriatric Aspects of Life Span Management	3
PT 5505 and PT 5506	Musculoskeletal Management 1 and Lab for PT 5505	5
PT 6223 and PT 6224	Musculoskeletal Management 2 and Lab for PT 6223	5
PT 6241	Screening for Medical Conditions in Physical Therapy Practice	4
PT 6000	Leadership, Administration, and Management	2
PT 6441	Clinical Education 1 (Summer)	6
PT 6215 and PT 6216	Assistive Technology and Lab for PT 6215 (Summer)	4
PT 6250	Clinical Integration 2: Evidence and Practice (Summer)	2
During the summer, complete one course in the following range: PT 6231 to PT 6237.		4
YEAR 6		
PT 6442	Clinical Education 2	6
PT 6448	Clinical Education 3	9
PT 6251	Diagnostic Imaging	3

Minor Requirement

Students must declare and successfully complete a minor or minor equivalent as part of their program of study.

Supporting Courses

Code	Title	Hours
YEAR 1		
MATH 1241	Calculus 1	4
PSYC 1101	Foundations of Psychology	4
PSYC 3404	Developmental Psychology	4

CHEM 1101 General Chemistry for Health Sciences 5
and CHEM 1102 and Lab for CHEM 1101
and CHEM 1103 and Recitation for CHEM 1101

CHEM 1104 Organic Chemistry for Health Sciences 5
and CHEM 1105 and Lab for CHEM 1104
and CHEM 1106 and Recitation for CHEM 1104

ENGW 1111 First-Year Writing 4

YEAR 2

BIOL 1117 Integrated Anatomy and Physiology 1 5
and BIOL 1118 and Lab for BIOL 1117

BIOL 1119 Integrated Anatomy and Physiology 2 5
and BIOL 1120 and Lab for BIOL 1119

PHYS 1145 Physics for Life Sciences 1 5
and PHYS 1146 and Lab for PHYS 1145

PHYS 1147 Physics for Life Sciences 2 5
and PHYS 1148 and Lab for PHYS 1147

PPTH 2210 Foundations of Biostatistics 4
or MATH 2280 Statistics and Software

ENGW 3306 Advanced Writing in the Health 4
Professions (a grade of C or higher
required)

YEAR 3

COOP 3945 Co-op Work Experience 0

YEAR 4

COOP 3945 Co-op Work Experience 0

Physical Therapy Major Grade/GPA Requirement

A grade of C or higher is required in all courses in the PT, HLTH, or EXSC subject areas.

Minimum 3.000 overall GPA required

Program Requirements

206 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Six Years, Two Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 1101	4	PSYC 3404	4	Vacation	0	Vacation	0
CHEM 1	4	CHEM 1	4				
CHEM 1102	1	CHEM 1105	1				
CHEM 1	0	CHEM 1	0				
MATH 1241	4	Minor course or elective	4				
PT 100C	1	Minor course or elective	4				
ENGW 1111	4						
18		17		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PPTH 2210 or MATH 2280	4	BIOL 1119	4	ENGW 3306	4	Co-op	0
PHYS 1117	4	BIOL 1118	1	Minor course or elective	4		
PHYS 1146	1	PHYS 1147	4				
BIOL 1119	4	PHYS 1145	1				
BIOL 1118	1	PT 2000	1				
Minor course or elective	4	Minor course or elective	4				
		PT 5101	3				
		PT 5102	1				
18		19		8		0	

Year 3

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
Co-op	0	PT 5131	4	PT 5138	4
		PT 5132	1	PT 5139	1
		HLTH 5450	4	PT 5140	4
		PT 516C	3	PT 5139	3
		PT 5161	1	PT 5134	1
		EXSC 44	4	PT 550C	2
0		17		15	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PT 5150	4	Co-op	0	Co-op	0	PT 5515	2
PT 5151	1					PT 5516	1
PT 5503	4					PT 5540	2
PT 5504	1					PT 6249	3
Minor course or elective	4					PT 6244	0
PT 5149	2						
PT 5450	2						
18		0		0		8	

Year 5

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PT 6241	4	PT 6221	4	PT 6441	6	PT advanced topics course	2
PT 600C	2	PT 6222	1			PT 625C	2
PT 5209	4	PT 6223	4			PT 6215	3
PT 521C	1	PT 6224	1			PT 6216	1
PT 5505	4	PT 5226	2				

PT 550€	1	PT 522€	2
PT 5227	3	PT 5230	3
	19	17	6
			8
Year 6			
Fall	Hours	Spring	Hours
PT 6442	6	PT 6448	9
PT 6251	3		
	9		9
Total Hours: 206			

School of Nursing

Website (<http://www.northeastern.edu/bouve/nursing>)

Rhonda Board, PhD, RN, CCRN

Associate Professor and Interim Dean, School of Nursing

Brenda Douglas, PhD, RN, CNE

Associate Clinical Professor and Assistant Dean of Undergraduate Programs

Janet S. Rico, PhD, MBA, FNP

Associate Clinical Professor and Assistant Dean for Graduate Education

Office of the Dean

102 Robinson Hall

617.373.3649

617.373.8675 (fax)

Undergraduate Program Office

102 Robinson Hall

617.373.6083

Lolita Hampton-Frisby, Administrative Coordinator,

l.hamptonfrisby@northeastern.edu

The School of Nursing offers a traditional Bachelor of Science and both an Accelerated Bachelor of Science (ABSN) and a Direct Entry (BSN) to Master's (MSN), for second degree students, in nursing designed to prepare students to become professional nurses by providing them with the knowledge, skills, and professional values needed for successful practice in a variety of healthcare settings. The school aims to provide all students—including those with diverse backgrounds and changing career goals—with a broad-based education that will foster ongoing personal and professional growth.

The mission of the Northeastern University School of Nursing is to educate our students to provide evidence-based, culturally and linguistically competent, ethical healthcare that is high quality, safe, and accessible to diverse local, national, and global communities. Our programs seek to prepare students to become leaders as nurse clinicians, educators, scholars, and researchers.

Nursing is both a science-based profession and a caring art. The curriculum draws on basic and behavioral sciences, the arts and humanities, and the art and science of nursing to help students understand the complexities of health and illness across the life span.

Special Requirements

All students must receive a health clearance from University Health and Counseling Services (UHCS). Health clearance is based on specific documentation of immunity from infectious disease and a physical examination (this may be done by the student's own healthcare provider). In addition, nursing students need a clinical clearance in order to participate in clinical courses. Clinical clearance, managed by the

School of Nursing's Clinical Placement Office, includes verification of certification in cardiopulmonary resuscitation (CPR); recent negative tuberculosis screening (PPD); positive titres for MMR, varicella, and hepatitis B; vaccines including TDAP and influenza; and additional health screenings as may be required by the program. It is the responsibility of the student to stay current and to provide documentation required for clinical clearance throughout the entire nursing program.

Clinical settings also require us to run a criminal background check. Additionally, international students require curricular practical training (CPT) clearance to meet federal requirements for all clinical and co-op experiences.

Students enrolled in the clinical courses may need access to a car to travel to assigned agencies. Students are responsible for their own transportation costs.

During academic semesters, students in the School of Nursing are required to wear the approved school uniform to their clinical site and in some clinical laboratory areas. Students are responsible for purchasing these uniforms, badges, and a lab supply pack.

In Massachusetts, and several other states, the registering board requires that graduates taking the National Council Licensing Examination (NCLEX-RN) meet standards of "good moral character" (GMC). Students may review the GMC requirement specified at Massachusetts General Laws Chapter 112, sections 74, 74A, and 76; Licensure Policy No. 00-01 under "Rules & Regulations" on the Massachusetts BORN website; or they can similarly investigate the requirements in the state where they expect to practice.

RN to BSN Hybrid Option

The Bouvé College of Health Sciences School of Nursing allows qualified individuals to take the next step in their career toward becoming a baccalaureate-prepared registered nurse. The RN to BSN program offers a comprehensive clinical curriculum where students are exposed to all nursing specialties and aspects of nursing leadership. Program participation may be completed on a part-time or a full-time basis depending on preference. For more information, contact the School of Nursing program call center at 888.206.6004.

Programs

Bachelor of Science in Nursing (BSN)

- Nursing (p. 454)
- Accelerated Program for Second-Degree Students (p. 457)
- RN-to-BSN (p. 457)

Nursing, BSN

The goal of the School of Nursing is to prepare students to think critically and to practice nursing competently and compassionately in rapidly changing practice environments. All efforts are designed to build nursing knowledge; enhance nursing practice and patient safety; foster professional integrity; and ultimately improve the health outcomes of patients, families, and communities across the continuum of care. This approach requires knowledge, skills, and attitudes that demonstrate leadership, quality care, critical thinking and clinical reasoning, cultural and linguistic competence, interprofessional collaboration, evidence-based practice, and integration of informatics and technology.

The clinical program takes place in the community where people live as well as in hospitals, rehabilitation centers, and long-term-care facilities. The curriculum is capped by courses that enable students to put

leadership and management skills into action and to synthesize the complete role of the professional nurse in a clinical practicum.

In addition to completing academic course work, students must meet the cooperative education requirement, which gives them the opportunity to integrate the theory and practice of nursing in selected settings.

Numerous community and institutional healthcare agencies in Greater Boston and across the country offer students an opportunity to gain experience in providing nursing care to a variety of patients and families and to understand that nurses have major roles in wellness and health promotion, acute care, and long-term care. Students in the program are strongly encouraged to participate in research activity and in global educational opportunities that can all be a part of the program.

The program is accredited by the Commission on Collegiate Nursing Education (CCNE) and is approved by the Board of Registration in Nursing of the Commonwealth of Massachusetts (BORN). Accreditation and approval indicate that the program meets educational standards for faculty, curriculum design, student quality, and overall university support. The School of Nursing has also been designated as a National Hartford Center of Gerontological Nursing Excellence for its contributions in the area of geriatric nursing and research. The school subscribes to the standards established by the American Association of Colleges of Nursing (AACN), of which it is a member.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Nursing Major Requirements

Code	Title	Hours
NRSNG 1000	College: An Introduction	1
NRSNG 2210	Influences on Health and Illness: A Nursing Perspective	3
NRSNG 2220 and NRSNG 2221	Nursing Interventions, Assessment, and Community Care and Lab for NRSNG 2220	5
NRSNG 2312	Pathophysiology	4
PHSC 4340	Pharmacology for the Health Professions	4
NRSNG 2000	Professional Development for Co-op	1
NRSNG 3323 and NRSNG 3324	Intermediate Interventions and Assessment and Lab for NRSNG 3323	2
NRSNG 3320 and NRSNG 3321	Nursing Care of Adults 1 and Clinical for NRSNG 3320	6
NRSNG 3302 and NRSNG 3303	Nursing with Women and Families and Clinical for NRSNG 3302	5
NRSNG 3420 and NRSNG 3421	Nursing Care of Adults 2 and Clinical for NRSNG 3420	6

NRSNG 3400 and NRSNG 3401	Nursing and the Promotion of Mental Health and Clinical for NRSNG 3400	5
NRSNG 5120	Statistics for Health Science	3
NRSNG 4502 and NRSNG 4503	Nursing Care of the Child and Clinical for NRSNG 4502	6
NRSNG 4604 and NRSNG 4605	Public Health Community Nursing and Clinical for NRSNG 4604	5
NRSNG 4610	Managing and Leading in Healthcare	4
NRSNG 4995	Comprehensive Nursing Practicum	5
HLTH 5450	Healthcare Research	4

Supporting Courses

Code	Title	Hours
CORE TERM 1		
BIOL 1117 and BIOL 1118	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117	5
CHEM 1101 and CHEM 1102	General Chemistry for Health Sciences and Lab for CHEM 1101	5
HSCI 1105	Human Nutrition	4
Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1241	Calculus 1	
MATH 1242	Calculus 2	
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1252	Calculus and Differential Equations for Biology 2	
MATH 1341	Calculus 1 for Science and Engineering	
CORE TERM 2		
BIOL 1121 and BIOL 1122	Basic Microbiology and Lab for BIOL 1121	5
BIOL 1119 and BIOL 1120	Integrated Anatomy and Physiology 2 and Lab for BIOL 1119	5
PSYC 1101	Foundations of Psychology	4
ENGW 1111	First-Year Writing	4
CLINICAL TERM 2		
SOCL 1101	Introduction to Sociology	4
CLINICAL TERM 3		
PSYC 3404	Developmental Psychology	4
CLINICAL TERM 4		
ENGW 3306	Advanced Writing in the Health Professions	4
CLINICAL TERM 5		
HLTH 2100 or PHIL 1165	Interprofessional Ethics for Individual and Population Health Moral and Social Problems in Healthcare	4

Electives

Code	Title	Hours
Complete three courses outside nursing or nursing courses not used in requirements above.		12

Program Requirements

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
NRSNG 1000	1	BIOL 1121	4	Vacation	0	Vacation	0
HSCI 1105	4	BIOL 1122	1				
MATH 1215	4	ENGW 1111	4				
BIOL 1117	4	BIOL 1119	4				
BIOL 1118	1	BIOL 1120	1				
CHEM 1101	4	PSYC 1101	4				
CHEM 1102	1						
CHEM 1103	0						
	19		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
NRSNG 2220	4	NRSNG 3323	1	PSYC 3404	4	Co-op	0
NRSNG 2221	1	NRSNG 3324	1	NRSNG 3400	3		
PHSC 4340	4	NRSNG 3320	4	NRSNG 3401	2		
NRSNG 2210	3	NRSNG 3321	2				
NRSNG 2312	4	NRSNG 3302	3				
		NRSNG 3303	2				
		SOCL 1101	4				
		NRSNG 2000	1				
	16		18		9		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	NRSNG 4604	3	Vacation	0	Co-op	0
		NRSNG 4605	2				
		NRSNG 3420	4				
		NRSNG 3421	2				
		NRSNG 5120	3				
	0		14		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	NRSNG 4502	4	ENGW 3306	4	Co-op	0
		NRSNG 4503	2	Elective	4		
		Elective	4				
		HLTH 5450	4				
	0		14		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op		NRSNG 4995	5
		NRSNG 4610	4
		HLTH 2100 or PHIL 1165	4
		Elective	4
	0		17

Total Hours: 133

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1117	4	BIOL 1121	4	Vacation	0	Vacation	0
BIOL 1118	1	BIOL 1122	1				
MATH 1215	4	ENGW 1111	4				
HSCI 1105	4	BIOL 1119	4				
CHEM 1101	4	BIOL 1120	1				
CHEM 1102	1	PSYC 1101	4				
CHEM 1103	0						
NRSNG 1000	1						
	19		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
NRSNG 2220	4	Co-op	0	Co-op	0	PSYC 3404	4
NRSNG 2221	1					NRSNG 3302	3
PHSC 4340	4					NRSNG 3303	2
NRSNG 2210	3						
NRSNG 2312	4						
NRSNG 2000	1						
	17		0		0		9

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1101	4	Co-op	0	Co-op	0	NRSNG 4604	3
NRSNG 3320	4					NRSNG 4605	2
NRSNG 3321	2					Elective	4
NRSNG 3400	3						
NRSNG 3401	2						
NRSNG 3323	1						
NRSNG 3324	1						
	17		0		0		9

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
NRSNG 3420	4	Co-op	0	Co-op	0	Vacation	0
NRSNG 3421	2						
NRSNG 5120	3						
ENGW 3306	4						
	13		0		0		0

Year 5			
Fall	Hours	Spring	Hours
NRSNG 4502	4	NRSNG 4610	4
NRSNG 4503	2	NRSNG 4995	5
HLTH 5450	4	HLTH 2100 or PHIL 1165	4
Elective	4	Elective	4
	14		17

Total Hours: 133

Nursing (BSN), Accelerated Program for Second-Degree Students

The Accelerated Bachelor of Science in Nursing (ABSN) hybrid program, which comprises 16 months of full-time study, combines online didactic course work and hands-on learning involving both clinical placements and experience in the skills laboratory. The program offers students an opportunity to work closely with nursing faculty to master the core skills necessary to excel in their nursing career. The program also seeks to prepare students to successfully take and pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN) and earn an RN license.

The ABSN curriculum includes 67 credits of undergraduate courses with online learning modules incorporating lectures and learning activities. The majority of these credits are completed online through an e-learning platform that allows students to listen to lectures, submit assignments, complete interactive learning modules, and engage in discussion with faculty and classmates.

The Bouvé College of Health Sciences School of Nursing has an extensive network of clinical affiliations at health centers, major teaching hospitals, and community hospitals that allow students to engage in clinical experiences covering a wide range of nursing specialties that include adult health, OB-GYN, pediatrics, behavioral and mental health, acute care, public health, health education, and management/leadership.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Code	Title	Hours
SEMESTER 1		
NRSG 2220 and NRSG 2221	Nursing Interventions, Assessment, and Community Care and Lab for NRSG 2220	5
NRSG 2312	Pathophysiology	4
NRSG 3302 and NRSG 3303	Nursing with Women and Families and Clinical for NRSG 3302	5
PHSC 4340	Pharmacology for the Health Professions	4
SEMESTER 2		
NRSG 2210	Influences on Health and Illness: A Nursing Perspective	3
NRSG 3320 and NRSG 3321	Nursing Care of Adults 1 and Clinical for NRSG 3320	6
NRSG 3400 and NRSG 3401	Nursing and the Promotion of Mental Health and Clinical for NRSG 3400	5
NRSG 3323 and NRSG 3324	Intermediate Interventions and Assessment and Lab for NRSG 3323	2
SEMESTER 3		
NRSG 3420 and NRSG 3421	Nursing Care of Adults 2 and Clinical for NRSG 3420	6
NRSG 4502 and NRSG 4503	Nursing Care of the Child and Clinical for NRSG 4502	6

HLTH 5450	Healthcare Research	4
SEMESTER 4		
NRSG 4604 and NRSG 4605	Public Health Community Nursing and Clinical for NRSG 4604	5
NRSG 4610	Managing and Leading in Healthcare	4
NRSG 4995	Comprehensive Nursing Practicum	5
NRSG 6306	Health Informatics	3

Program Requirement

67 total semester hours required

Nursing, RN-to-BSN

The Bouvé College of Health Sciences School of Nursing prepares qualified individuals to take the next step in their career to become a baccalaureate-prepared registered nurse. The RN to BSN program offers a comprehensive curriculum to prepare students as practitioners and leaders in the professional role. Program participation may be completed on a part-time or a full-time basis depending on preference. The program consists of online course work and one clinical experience in the area of public health nursing. For more information, contact the School of Nursing program call center at 888.206.6004.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major Requirements

Code	Title	Hours
NRSG 2312	Pathophysiology	4
NRSG 4604 and NRSG 4605	Public Health Community Nursing and Clinical for NRSG 4604	5
NRSG 4610	Managing and Leading in Healthcare	4
NRSG 4620	Innovations in Nursing Practice	4
NRSG 5100	Professional Development and Scientific Basis	3
NRSG 5101	Computer and Nursing Informatics	3
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5120	Statistics for Health Science	3

Supporting Courses

Code	Title	Hours
ENGW 3250	Writing for the Professions	4
HLTH 1510	Introduction to Healthcare Ethics	4
HLTH 5450	Healthcare Research	4

PHTH 2300	Communication Skills for the Health Professions	4
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Program Requirement

45 total semester hours required (83 credits are transferred from initial degrees and other course work).

School of Pharmacy

Website (<http://www.northeastern.edu/bouve/pharmacy>)

John R. Reynolds, PharmD
Professor and Dean

140 The Fenway

617.373.3069

617.373.7655 (fax)

schoolofpharmacy@northeastern.edu

The School of Pharmacy is dedicated to excellence in pharmacy-related education, research, and service, including the provision of patient care. We prepare students with knowledge, skills, and values for careers in pharmacy practice and the pharmaceutical sciences. Our programs promote intellectual growth, professionalism, and lifelong learning. Through the generation and dissemination of new knowledge and through scholarship and community service, the school contributes to improved individual and population health.

The six-year (two years of preprofessional and four years of professional courses) program at Northeastern University leading to the professional Doctor of Pharmacy degree (PharmD) fully integrates campus-based learning with experiential learning, including the university's signature cooperative education (co-op) program, to provide students with the knowledge, skills, and abilities necessary to succeed in the pharmacy profession. Our students promote and ensure the safe and effective use of drugs and provide medication therapy management services. In addition to preparing and dispensing prescribed medications, our students provide information to patients about medications and their uses; advise physicians, other prescribers, and other healthcare practitioners on medication selection, dosages, interactions, and adverse effects; and monitor patient responses to drug therapy.

Our students are well equipped to provide patient care services in a variety of settings. Most of our graduates work in community pharmacies or in healthcare facilities such as hospitals and ambulatory clinics. Additional practice opportunities exist in health maintenance organizations, private practice groups, long-term-care facilities, home healthcare, the Public Health Service, the armed services, and law enforcement agencies such as the Federal Drug Administration (FDA) or Drug Enforcement Administration (DEA). Graduates may also find employment in drug development, marketing and research within the pharmaceutical industry, colleges of pharmacy, and professional association management. In addition, many of our graduates go on to pharmacy practice residencies, fellowships, and leading graduate programs.

Pharmacy students are admitted with the expectation that by working with faculty, staff, and each other, they will develop the knowledge, skills, and attitudes necessary for academic and professional success. Students follow academic progression plans for their respective years of graduation. Any deviation from the prescribed curriculum will require faculty/staff permission and an approved plan of study from the school's Academic Standing Committee.

The pharmacy curriculum includes introductory (cooperative education) and advanced pharmacy practice experiences (IPPEs and APPEs). These pharmacy practice experiences are provided primarily under the direct supervision of qualified pharmacist preceptors and occasionally with other qualified healthcare professionals. The school is affiliated with many world-class practice sites throughout the United States, providing students with access to experienced clinicians and scholars. Although every effort is made to accommodate individual circumstances and requests, students should be prepared to travel outside the Boston area to complete some of their pharmacy practice experiences. Availability of a car may be required, as some sites are not accessible by public transportation. All expenses associated with pharmacy practice experiences, including travel and housing, are the responsibility of the student.

IPPEs are competitive placements that are based on job availability in a geographic region. The placements are facilitated by the school's cooperative education coordinators. Students are required to earn a satisfactory (S) grade on one IPPE in a community setting and on one IPPE in an institutional/hospital practice setting.

APPE placements are provided based on site/preceptor availability and the final approval of the school's Office of Experiential Education. Students may be able to petition for out-of-system APPEs; however, availability for such requests is limited.

To be eligible for a Doctor of Pharmacy degree (PharmD), a student must successfully complete all courses in the curriculum including the IPPEs (co-op) and APPEs; meet the academic progression standards of the program; meet the technical standards of the program; and satisfy all other requirements as stated in the *Bouvé College of Health Sciences Undergraduate Student Information Manual*. The pharmacy program, which is fully accredited by the Accreditation Council for Pharmacy Education (ACPE), subscribes and adheres to the standards established by ACPE.

Students enrolled in the PharmD program will be awarded a Bachelor of Science in Pharmacy Studies after successful completion of all didactic and laboratory courses in semesters 1 through 10 of the pharmacy curriculum. The Bachelor of Science in Pharmacy Studies does not allow for individuals to pursue licensure for direct patient care in the practice of pharmacy. To earn the PharmD degree, students must complete an additional 36 semester hours of APPEs (see "Requirements for the Doctor of Pharmacy Advanced Pharmacy Practice Experiences" below) with an overall GPA of 3.000 or greater in the Bouvé College of Health Sciences graduate program.

Pharmacy graduates must meet specific requirements to qualify for professional licensure in the state where they plan to practice as a registered pharmacist. These requirements include graduating from an accredited school of pharmacy, passing national and state board examinations, and completing internship hours. The internship is a period of practical experience conducted under the supervision of a registered pharmacist. Massachusetts requires 1,500 internship hours, all of which are satisfied through IPPEs (co-op) and APPEs.

The Bachelor of Science in Pharmaceutical Sciences is geared toward highly motivated students who are strongly focused on careers in biomedical/pharmaceutical research, biomedicine, and/or the pharmaceutical/biotech industries. The educational approach is an innovative paradigm that immerses students into undergraduate research at the earliest possible time and promotes graduate-style mentorship and experiential learning in the context of an intensive scientific curriculum with specialized educational opportunities. Pharmaceutical sciences are by nature highly interdisciplinary: they include pharmacology, physiology, structural biology, medicinal chemistry, pharmaceuticals, and the allied

fields of toxicology, chemical biology, nanomedicine, and a spectrum of emerging health science disciplines that span classical life sciences, engineering, and biotechnology. All students take courses in basic chemistry, basic biology, organic chemistry, physiology, pharmacology, medicinal chemistry, and pharmaceutical sciences and can then further specialize their education with elective courses in areas of their interest and their developing career trajectory. Entering students are expected to initiate a self-directed search for opportunities to participate in laboratory research. In the first year, students take Introduction to Health Science Research, a course that introduces students to the scientific literature, hypothesis generation, and use of the scientific method to investigate unsolved problems. To facilitate student identification and research, this course also introduces students to faculty researchers from within and outside of the university with the goal of matching students with faculty research mentors. Graduates of the Bachelor of Science in Pharmaceutical Sciences program will have a solid foundation in the science of drug discovery, delivery, evaluation, and development, as well as specialized training at the undergraduate level in research labs. The program prepares students to pursue graduate studies, professional programs, or to enter the biopharmaceutical industry. The BS degree requires a minimum of four years of study and provides for at least one co-op period.

Professional and/or legal exigencies arise from time to time that may necessitate changes in a pharmacy course, progression, and/or graduation requirements. Students should review their status with academic advisors on a timely basis and refer to current publications for updated information.

Requirements for the PharmD Pharmacy Practice Experiences (PPEs)

Requirements for the successful completion of the PharmD PPEs include:

1. Evidence of health clearance from University Health and Counseling Services before placements at any PPE site.
2. Satisfactory completion of any additional site-specific requirements including, but not limited to, criminal record information (CORI), urine drug screens, and verification of immunization status. All fees associated with these requirements are the responsibility of the student.

If the student learns the urine screen (aka test #1) is positive, the student will notify the OEE (pharmacyoe@northeastern.edu) and immediately complete a second urine screen (aka test #2). A professional concern form will be completed based on test #1 results.

- If that urine screen (test #2) is negative (-), the student will be allowed to continue the PPEs. However, the student will be asked to complete a random urine screen (aka test #3) at a time determined by the OEE. If this urine screen (test #3) is positive (+), the student will be administratively removed from the active PPEs and graduation may be delayed. A second professional concern form will be completed, based on test #3 results. The return to PPEs will occur once a repeat urine test is negative. That repeat negative test will be followed up by a random urine screen at a time determined by the OEE.
- If the urine screen (test #2) is positive (+), the student will be administratively removed from the PPEs and graduation may be delayed. The return to PPEs will occur once a repeat urine screen is negative. That negative screen will be followed up by a random urine screen at a time determined by the OEE. A second professional

concern form will be completed based on a positive test #3 result.

3. Adherence to the school's code of professional conduct and university's code of conduct policies while off-campus.
4. Maintenance of an active, pharmacy intern license in every state where the student completes an experience.
5. Compliance with site-specific requirements (via site descriptions) and completion of site requests within specified deadlines. Failure to complete these requirements as directed will likely result in delay of graduation.
6. Maintenance of a portfolio throughout the professional years and completion of all portfolio submission requirements within specified deadlines.
7. Students are expected to adhere to the policies and standards of their program major as stated to progress through their curriculum as planned. Students seeking any exceptions to the program policies and standards specified for their program major must present a petition before the School of Pharmacy Academic Standing Committee.

Given programmatic requirements, coupled with concerns over the loss of therapeutic knowledge, requests for a general leave of absence:

- Must comply with all stated Northeastern University general policies, regardless of the academic year.
- May be made at any time period during the freshman through P2 years.
- During the P3 academic year, any request for a general leave must be made no later than February 1 of the given academic year. Requests after this date for students in the P3 year will not be permitted.
- During the P4 academic year, requests for a general leave cannot be made at any time.

Technical Standards for the Doctor of Pharmacy Program

The PharmD program at Northeastern University is a rigorous and challenging academic program that requires students to possess specific characteristics and abilities within the cognitive, affective, and psychomotor domains, referred to here as technical standards. To successfully progress in and ultimately complete the didactic, laboratory, and experiential components of the PharmD program, students must meet the standards described below.

INTELLECTUAL ABILITIES

Students must have well-developed problem-solving and critical-thinking skills. Cognitive function must be appropriate to integrate, evaluate, and apply information gained through measurement, analysis, calculation, and reasoning. Students must have the capacity to learn efficiently in classroom, laboratory, small group and experiential settings, and through independent study. Students are required to demonstrate the ability to integrate course content knowledge with clinical practice applications to optimize medication therapy management.

COMMUNICATION SKILLS

Students must be able to communicate effectively with colleagues, professors, patients, families, and healthcare providers. This includes efficiently comprehending, speaking, reading, and writing in English. Students must be able to process and use appropriate nonverbal cues and be proficient in the use of electronic communication media.

BEHAVIORAL AND SOCIAL ATTRIBUTES

Students must demonstrate professionalism, maturity, integrity, honesty, compassion, and respect when relating to others. Students must have sufficient mental and emotional health to complete work and responsibilities using good judgment. Students must be able to tolerate and adapt to stressful workloads and situations and modify behavior based on constructive criticism. Students must be able to function in accordance with the legal, ethical, and professional standards of practice.

OBSERVATION AND MOTOR SKILLS

Students must have functional use of visual, auditory, and tactile senses. Students must be able to observe and perform experiments, physical assessments, patient interviews, and medication order processing. Students must be able to distinguish physical characteristics of medications by inspection. Students must have coordination of gross and fine muscular movements sufficient to perform pharmacy-related tasks including compounding and dispensing medications, administering medications, and using computers and other technology necessary for learning and professional practice.

Programs**Bachelor of Science (BS)**

- Pharmaceutical Sciences (p. 460)
- Pharmacy Studies (p. 461)

Doctor of Pharmacy (PharmD)

- Pharmacy (p. 463)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 467)

Pharmaceutical Sciences, BS

The Bachelor of Science in Pharmaceutical Sciences is geared toward highly motivated students who are strongly focused on careers in biomedical/pharmaceutical research, biomedicine, and/or the pharmaceutical/biotech industries. The educational approach is an innovative paradigm that immerses students into undergraduate research at the earliest possible time and promotes graduate-style mentorship and experiential learning in the context of an intensive scientific curriculum with specialized educational opportunities. Pharmaceutical sciences are by nature highly interdisciplinary: pharmacology; physiology; structural biology; medicinal chemistry; pharmaceuticals and the allied fields of toxicology, chemical biology, and nanomedicine; and a spectrum of emerging health science disciplines that span classical life sciences, engineering, and biotechnology. All students take courses in basic chemistry, basic biology, organic chemistry, physiology, pharmacology, medicinal chemistry, and pharmaceutical sciences. Students can then further specialize their educations with elective courses in areas of their interest and their developing career trajectories.

Entering students are expected to initiate a self-directed search for opportunities to participate in laboratory research. In the first year, students complete Introduction to Health Science Research (PHSC 2650), a course that introduces students to scientific literature, hypothesis generation, and use of the scientific method to investigate unsolved problems. To facilitate student identification and research, this course also introduces students to faculty researchers from within and outside of the university, with the goal of matching students with faculty research mentors.

Graduates of the Bachelor of Science in Pharmaceutical Sciences program will have a solid foundation in the science of drug discovery, delivery, evaluation, and development, as well as specialized training at the undergraduate level in research labs. The program prepares students to pursue graduate studies, enroll in professional programs, or enter the biopharmaceutical industry. The BS degree requires a minimum of four years of study and provides for at least one co-op period. Graduates are positioned to pursue MS and PhD programs in the biomedical sciences, medical schools, and other health professional degree programs.

**Bachelor of Science in Pharmaceutical Sciences—
Progression Standards**

The Bachelor of Science in Pharmaceutical Sciences requires students to maintain a set of academic standards that include maintaining an overall GPA of 3.000 or better and a science GPA of 3.000 or better. A grade of C is the minimal passing grade for any of the required courses in the major. The program also requires students to seek out and establish laboratory research opportunities with a faculty-level mentor. It is advised that students get involved in laboratory research during their first year in the program. It is required that the student secure a laboratory research opportunity by the spring semester of the second year and complete Lab Research Rotation (PHSC 2100) by the end of the second year.

All students admitted to the pharmaceutical sciences major will need to adhere to progression policies to enter the third year of the program. At the end of the second year, fall semester, failure to complete all required course work at or exceeding program standards and/or to not involve oneself in a laboratory research opportunity will be considered a professional deficiency. According to standard policy, affected students will be invited to meet with the School of Pharmacy Academic Standing Committee and may prepare a report describing how they will satisfy outstanding requirements by the end of the summer of the second year for consideration by the committee. If the plan is not accepted, or accepted but not executed by the end of summer of the second year (or as agreed), then the student will be dismissed from the program. Under such circumstances, the student can follow standard School of Pharmacy policies to appeal.

Securing a Laboratory Research Opportunity

The Bachelor of Science in Pharmaceutical Sciences requires students to earn a minimum of 12 credits for laboratory research through participation in a research rotation (Laboratory Research Rotation) and the writing and completion of an undergraduate thesis (comprised of Senior Thesis and Senior Thesis Continuation). Students must have the initiative to seek out opportunities for undergraduate laboratory research either on campus, off campus at a neighboring university, or in an industry setting accessible to the student, under the direction of a faculty-level mentor. Students are assisted with securing laboratory research experiences through participation in the Introduction to Health Science Research course during the spring of the first year and as needed, through work with a faculty advisor within the BS in Pharmaceutical Sciences program. A variety of university resources are also available to assist students in finding opportunities, including the Bouvé College Office of Research, the Northeastern University Office of Undergraduate Research and Fellowships, the Northeastern University Integrated Initiative for Global Health, and various other departmental and college resources across Northeastern University.

Change of Major

Students are eligible to transfer into the program at any point prior to the third year of the program. All students who wish to transfer into the program and have completed Biology 1 with lab and Chemistry 1 with

lab must have earned a grade of B or better and have an overall GPA of 3.000 or better.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required courses. Students are responsible for satisfying these requirements with open electives.

Pharmaceutical Sciences Major Requirements

Code	Title	Hours
SEMESTER 1		
PHMD 1000	College: An Introduction	1
SEMESTER 2		
PHSC 2650	Introduction to Health Science Research	4
SEMESTER 3		
PHMD 1201 and PHMD 1202	Introduction to Pharmacy Practice and Lab for PHMD 1201	3
PHSC 2301 and PHSC 2302	Human Physiology 1 and Human Anatomy Lab	4
SEMESTER 4		
PHSC 2100	Lab Research Rotation	4
PHSC 2303 and PHSC 2304	Human Physiology 2 and Human Physiology Lab	4
PHSC 2400	Research Ethics for Beginning Health Scientists	4
SEMESTER 5		
PHSC 2320	Biochemistry	4
PHSC 3411	Pharmaceutics 1	4
PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
SEMESTER 6		
PHSC 3412	Pharmaceutics 2	4
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5
PHSC 5360	Anti-Infectives	4
Optional Elective		0-4
SEMESTER 7		
PHSC 4997	Senior Thesis	4
<i>Statistics/Experimental Design Requirement</i>		
PHTH 2210	Foundations of Biostatistics	
or PHSC 6214	Experimental Design and Biostatistics	
<i>Toxicology Requirement</i>		3

Complete at least 3 semester hours in the area of toxicology taken after successful completion of PHSC 4502. Contact your advisor for course options.

NUpath Elective		4
SEMESTER 8		
PHSC 2330	Immunology	3
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3
PHSC 4998	Senior Thesis Continuation	4
NUpath Elective		4

Supporting Courses

Code	Title	Hours
SEMESTER 1		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
PSYC 1101	Foundations of Psychology	4
SEMESTER 2		
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
MATH 1241	Calculus 1	4
SEMESTER 3		
PHYS 1149 and PHYS 1150	Physics for Pharmacy and Lab for PHYS 1149	5
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
SEMESTER 4		
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5

Writing Requirement

Code	Title	Hours
SEMESTER 1		
ENGW 1111	First-Year Writing (a grade of C or higher required)	4
SEMESTER 5		
ENGW 3306	Advanced Writing in the Health Professions	4

Program Requirement

132 total semester hours required

Pharmacy Studies, BS

Students enrolled in the Doctor of Pharmacy (PharmD) program will be awarded a Bachelor of Science in Pharmacy Studies after successful completion of all didactic and laboratory courses in semesters 1 through 10 of the pharmacy curriculum with an overall grade-point average (GPA) of 2.000 or greater. The Bachelor of Science in

Pharmacy Studies does not allow for individuals to pursue licensure for direct patient care in the practice of pharmacy.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

The NUpath requirement Interpreting Culture (IC) is not explicitly satisfied by required courses. Students are responsible for satisfying this requirement with an open elective.

Pharmacy Studies Major Grade Requirement

A grade of C or higher is required in all PHMD and PHSC courses.

Pharmacy Major Courses

Code	Title	Hours
SEMESTER 1		
PHMD 1000	College: An Introduction	1
SEMESTER 2		
PHMD 1001	Introduction to the Profession of Pharmacy	1
SEMESTER 3		
PHSC 2301 and PHSC 2302	Human Physiology 1 and Human Anatomy Lab	4
SEMESTER 4		
PHMD 1201 and PHMD 1202	Introduction to Pharmacy Practice and Lab for PHMD 1201	3
PHSC 2303 and PHSC 2304	Human Physiology 2 and Human Physiology Lab	4
<i>GPA Progression Requirement for Third Year</i>		
A 3.000 GPA is required at the end of the second year to progress to the third year.		
SEMESTER 5		
PHMD 2350	Healthcare Systems	3
PHSC 2320	Biochemistry	4
PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
PHSC 3411	Pharmaceutics 1	4
SEMESTER 6		
PHMD 2310 and PHMD 2311	Educational and Behavioral Interventions in Pharmacy Practice and Lab for PHMD 2310	2.5
PHMD 5250	Pharmacy Care Management	3
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 3412	Pharmaceutics 2	4
SEMESTER 7		
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3

PHSC 2330	Immunology	3
PHMD 4611	Comprehensive Disease Management 1	6
PHMD 4612	Comprehensive Disease Management 1 Seminar	1
PHMD 3450	Research Methodology and Biostatistics	3
SEMESTER 8		
PHSC 5360	Anti-Infectives	4
PHMD 4621	Comprehensive Disease Management 2	6
PHMD 4622	Comprehensive Disease Management 2 Seminar	1
PHMD 4623	Comprehensive Disease Management 2 Skills Lab	0.5
PHMD 5330	Jurisprudence	3
SEMESTER 9		
PHMD 5223	Evidence-Based Medicine	2
PHMD 4631	Comprehensive Disease Management 3	6
PHMD 4632	Comprehensive Disease Management 3 Seminar	1
PHMD 4633	Comprehensive Disease Management 3 Skills Lab	0.5
SEMESTER 10		
PHMD 4641	Comprehensive Disease Management 4	6
PHMD 4642	Comprehensive Disease Management 4 Seminar	1
PHMD 4643	Comprehensive Disease Management 4 Skills Lab	0.5
PHMD 5450	Advanced Pharmacy Practice Experience Preparatory Seminar	1
PHMD 5270	Economic Evaluation of Pharmaceuticals and Pharmacy Practice	2
Professional Elective and Capstone Requirements		
Code	Title	Hours
Open Electives		
A minimum of 8 semester hours of open electives are required. Additional electives may be required to fulfill the total semester hours required for your program.		8
Professional Elective		
Complete at least two semester hours during the professional phase of the program (after semester 4) from the following:		2
HLTH 1010	From the Community to the Intensive Care Unit: Approaching Interdisciplinary Research in the Elderly	
HLTH 2302	Alternative Medicine	
HLTH 5135	Developing an Interdisciplinary Approach to Health Management for Older Adults	
HLTH 5280	The (in)Visibility of (dis)Ability in Society	
HSCI 5230	Clinical Nutrition Applications in Health and Disease	
PHMD 3600	Leadership and Advocacy in Health Professions	
PHMD 4350	Exploring Academic Careers	
PHMD 4581	Cancer Chemotherapy	

PHMD 4585	Research Methods in Health Systems
PHMD 4880	Special Topics
PHMD 4970	Junior/Senior Honors Project 1
PHMD 4971	Junior/Senior Honors Project 2
PHMD 4991	Research
PHMD 4992	Directed Study
PHSC 4971	Junior/Senior Honors Project 2
PHMD 4890	Contemporary Issues in Geriatric Pharmacy
PHSC 4991	Research
PHSC 4992	Directed Study
PHSC 5100	Concepts in Pharmaceutical Science
PHSC 6210	Drug Design, Evaluation, and Development
PHSC 6212	Research Skills and Ethics
PHSC 6218	Biomedical Chemical Analysis
PHSC 6224	Behavioral Pharmacology and Drug Discovery
PHSC 6226	Imaging in Medicine and Drug Discovery
PMCL 6262	Receptor Pharmacology
PMST 6250	Advanced Physical Pharmacy
PMST 6252	Pharmacokinetics and Drug Metabolism
PMST 6254	Advanced Drug Delivery System
PHTH 5120	Race, Ethnicity, and Health in the United States
PHTH 5202	Introduction to Epidemiology
PHTH 5210	Biostatistics in Public Health
PHTH 5212	Public Health Administration and Policy
PHTH 5214	Environmental Health
PHTH 5222	Health Advocacy
PHTH 5224	Social Epidemiology
PHTH 5226	Strategic Management and Leadership in Healthcare
PHTH 5228	Advances in Measuring Behavior
PHTH 5232	Evaluating Healthcare Quality
PHTH 5234	Economic Perspectives on Health Policy
PHTH 5236	Public Health Nutrition
PHTH 5540	Health Education and Program Planning
PHTH 6200	Principles and History of Urban Health
PHTH 6204	Society, Behavior, and Health
PHTH 6208	Urban Community Health Assessment
PHTH 6320	Qualitative Methods in Health and Illness
PSYC 4514	Clinical Neuroscience
NRSRG 1205	Wellness
NRSRG 6282	Clinical Psychopharmacology
NRSRG 6287	Child and Adolescent Psychopharmacology
NRSRG 6300	Healthcare Finance and Marketing
NRSRG 6302	Health Policy and Law
NRSRG 6306	Health Informatics

NRSRG 6310	Nurse/Healthcare Entrepreneur
HINF 5101	Introduction to Health Informatics and Health Information Systems
HINF 5102	Data Management in Healthcare
HINF 6205	Creation and Application of Medical Knowledge
SLPA 1101	Introduction to Communication Disorders
SPNS 1402	Elementary Spanish 2 for Healthcare Professionals
SPNS 2302	Intermediate Spanish Immersion 2
CAEP 6220	Development Across the Life Span
CAEP 6290	Reality Therapy

Capstone

PHMD 5600	Pharmacy Capstone	4
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Supporting Courses

Code	Title	Hours
SEMESTER 1		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
PSYC 1101	Foundations of Psychology	4
SEMESTER 2		
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
MATH 1241	Calculus 1	4
SEMESTER 3		
PHYS 1149 and PHYS 1150	Physics for Pharmacy and Lab for PHYS 1149	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
SEMESTER 4		
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Writing Requirements

Code	Title	Hours
SEMESTER 1		
ENGW 1111	First-Year Writing (a grade of C or higher required)	4
SEMESTER 4		
ENGW 3306	Advanced Writing in the Health Professions	4

Program Requirement

166 total semester hours required

Pharmacy, PharmD

The six-year (two years of preprofessional and four years of professional courses) program at Northeastern University leading to the professional Doctor of Pharmacy degree (PharmD) fully integrates campus-based learning with experiential learning, including the university's signature

cooperative education (co-op) program, to provide students with the knowledge, skills, and abilities necessary to succeed in the pharmacy profession. Our students promote and ensure the safe and effective use of drugs and provide medication therapy management services. In addition to preparing and dispensing prescribed medications, our students provide information to patients about medications and their uses; advise physicians, other prescribers, and other healthcare practitioners on medication selection, dosages, interactions, and adverse effects; and monitor patient responses to drug therapy.

The pharmacy curriculum includes introductory (cooperative education) and advanced pharmacy practice experiences (IPPEs and APPEs). These pharmacy practice experiences are provided primarily under the direct supervision of qualified pharmacist preceptors and occasionally with other qualified healthcare professionals. The school is affiliated with many world-class practice sites throughout the United States, providing students with access to experienced clinicians and scholars. Although every effort is made to accommodate individual circumstances and requests, students should be prepared to travel outside the Boston area to complete some of their pharmacy practice experiences. Availability of a car may be required, as some sites are not accessible by public transportation. All expenses associated with pharmacy practice experiences, including travel and housing, are the responsibility of the student.

IPPEs are competitive placements that are based on job availability in a geographic region. The placements are facilitated by School of Pharmacy cooperative education coordinators. Students are required to earn a satisfactory (S) grade on one IPPE in a community setting and on one IPPE in an institutional/hospital practice setting.

APPE placements are provided based on site/preceptor availability and the final approval of the School of Pharmacy Office of Experiential Education (OEE). Students may be able to petition the OEE for out-of-system APPEs; however, availability for such requests is limited.

To be eligible for a Doctor of Pharmacy degree, a student must successfully complete all courses in the curriculum including the IPPEs (co-op) and APPEs; meet the academic progression standards of the program; meet the technical standards of the program; and satisfy all other requirements as stated in the *Bouvé College of Health Sciences Undergraduate Student Manual* (<https://bouve.northeastern.edu/undergraduate/student-manual>). The pharmacy program, which is fully accredited by the Accreditation Council for Pharmacy Education (ACPE) (<https://www.acpe-accredit.org>), subscribes and adheres to the standards established by ACPE.

Students enrolled in the PharmD program will be awarded a Bachelor of Science in Pharmacy Studies after successful completion of all didactic and laboratory courses in semesters 1 through 10 of the pharmacy curriculum. The Bachelor of Science in Pharmacy Studies does not allow for individuals to pursue licensure for direct patient care in the practice of pharmacy. To earn the PharmD degree, students must complete an additional 36 semester hours of APPEs with an overall GPA of 3.000 or greater in the Bouvé College of Health Sciences graduate program.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

The NUPath requirement Interpreting Culture (IC) is not explicitly satisfied by required courses. Students are responsible for satisfying this requirement with an open elective.

Pharmacy Major (PharmD) Grade Requirement

A grade of C or higher is required in all PHMD and PHSC courses.

Pharmacy Major Requirements

A 3.000 GPA is required at the end of the second year to progress to the third year (first professional year).

Code	Title	Hours
SEMESTER 1		
PHMD 1000	College: An Introduction	1
SEMESTER 2		
PHMD 1001	Introduction to the Profession of Pharmacy	1
SEMESTER 3		
PHSC 2301 and PHSC 2302	Human Physiology 1 and Human Anatomy Lab	4
SEMESTER 4		
PHMD 1201 and PHMD 1202	Introduction to Pharmacy Practice and Lab for PHMD 1201	3
PHSC 2303 and PHSC 2304	Human Physiology 2 and Human Physiology Lab	4
SEMESTER 5		
PHMD 2350	Healthcare Systems	3
PHSC 2320	Biochemistry	4
PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
PHSC 3411	Pharmaceutics 1	4
SEMESTER 6		
PHMD 2310 and PHMD 2311	Educational and Behavioral Interventions in Pharmacy Practice and Lab for PHMD 2310	2.5
PHMD 5250	Pharmacy Care Management	3
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 3412	Pharmaceutics 2	4
SEMESTER 7		
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3
PHSC 2330	Immunology	3
PHMD 4611	Comprehensive Disease Management 1	6
PHMD 4612	Comprehensive Disease Management 1 Seminar	1
PHMD 3450	Research Methodology and Biostatistics	3
SEMESTER 8		
PHMD 5330	Jurisprudence	3
PHSC 5360	Anti-Infectives	4

PHMD 4621	Comprehensive Disease Management 2	6
PHMD 4622	Comprehensive Disease Management 2 Seminar	1
PHMD 4623	Comprehensive Disease Management 2 Skills Lab	0.5

SEMESTER 8 or 9 or 10

PHMD 5600	Pharmacy Capstone	4
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SEMESTER 9

PHMD 5223	Evidence-Based Medicine	2
PHMD 4631	Comprehensive Disease Management 3	6
PHMD 4632	Comprehensive Disease Management 3 Seminar	1
PHMD 4633	Comprehensive Disease Management 3 Skills Lab	0.5

SEMESTER 10

PHMD 4641	Comprehensive Disease Management 4	6
PHMD 4642	Comprehensive Disease Management 4 Seminar	1
PHMD 4643	Comprehensive Disease Management 4 Skills Lab	0.5
PHMD 5270	Economic Evaluation of Pharmaceuticals and Pharmacy Practice	2
PHMD 5450	Advanced Pharmacy Practice Experience Preparatory Seminar	1

SEMESTER 11

A minimum 3.000 GPA is required for Semester 11.

Advanced Practice Experience

Select courses in the following range to complete six, six-week rotations: 36

PHMD 6440 to PHMD 6474

Professional Elective and Capstone Requirements

Code	Title	Hours
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Open Electives

A minimum of 8 semester hours of open electives are required. Additional electives may be required to fulfill the total semester hours required for your program. 10

Professional Elective

Complete at least two semester hours during the professional phase of the program (after semester 4) from the following: 2

HLTH 1010	From the Community to the Intensive Care Unit: Approaching Interdisciplinary Research in the Elderly	
HLTH 2302	Alternative Medicine	
HLTH 5135	Developing an Interdisciplinary Approach to Health Management for Older Adults	
HLTH 5280	The (in)Visibility of (dis)Ability in Society	
HSCI 5230	Clinical Nutrition Applications in Health and Disease	
PHMD 3600	Leadership and Advocacy in Health Professions	
PHMD 4350	Exploring Academic Careers	
PHMD 4581	Cancer Chemotherapy	
PHMD 4585	Research Methods in Health Systems	

PHMD 4880	Special Topics
PHMD 4890	Contemporary Issues in Geriatric Pharmacy
PHMD 4970	Junior/Senior Honors Project 1
PHMD 4971	Junior/Senior Honors Project 2
PHMD 4991	Research
PHMD 4992	Directed Study
PHSC 4971	Junior/Senior Honors Project 2
PHSC 4991	Research
PHSC 4992	Directed Study
PHSC 5100	Concepts in Pharmaceutical Science
PHSC 6210	Drug Design, Evaluation, and Development
PHSC 6212	Research Skills and Ethics
PHSC 6218	Biomedical Chemical Analysis
PHSC 6224	Behavioral Pharmacology and Drug Discovery
PHSC 6226	Imaging in Medicine and Drug Discovery
PMCL 6262	Receptor Pharmacology
PMST 6250	Advanced Physical Pharmacy
PMST 6252	Pharmacokinetics and Drug Metabolism
PMST 6254	Advanced Drug Delivery System
PTH 5120	Race, Ethnicity, and Health in the United States
PTH 5202	Introduction to Epidemiology
PTH 5210	Biostatistics in Public Health
PTH 5212	Public Health Administration and Policy
PTH 5214	Environmental Health
PTH 5222	Health Advocacy
PTH 5224	Social Epidemiology
PTH 5226	Strategic Management and Leadership in Healthcare
PTH 5228	Advances in Measuring Behavior
PTH 5232	Evaluating Healthcare Quality
PTH 5234	Economic Perspectives on Health Policy
PTH 5236	Public Health Nutrition
PTH 5540	Health Education and Program Planning
PTH 6200	Principles and History of Urban Health
PTH 6204	Society, Behavior, and Health
PTH 6208	Urban Community Health Assessment
PTH 6320	Qualitative Methods in Health and Illness
PSYC 4514	Clinical Neuroscience
NRSG 1205	Wellness
NRSG 6282	Clinical Psychopharmacology
NRSG 6287	Child and Adolescent Psychopharmacology
NRSG 6300	Healthcare Finance and Marketing
NRSG 6302	Health Policy and Law
NRSG 6306	Health Informatics
NRSG 6310	Nurse/Healthcare Entrepreneur

HINF 5101	Introduction to Health Informatics and Health Information Systems	
HINF 5102	Data Management in Healthcare	
HINF 6205	Creation and Application of Medical Knowledge	
SLPA 1101	Introduction to Communication Disorders	
SPNS 1402	Elementary Spanish 2 for Healthcare Professionals	
SPNS 2302	Intermediate Spanish Immersion 2	
CAEP 6220	Development Across the Life Span	
CAEP 6290	Reality Therapy	
Capstone		
PHMD 5600	Pharmacy Capstone	4

Supporting Courses

Code	Title	Hours
SEMESTER 1		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
PSYC 1101	Foundations of Psychology	4
SEMESTER 2		
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
MATH 1241	Calculus 1	4
SEMESTER 3		
PHYS 1149 and PHYS 1150	Physics for Pharmacy and Lab for PHYS 1149	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
SEMESTER 4		
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Writing Requirements

Code	Title	Hours
SEMESTER 1		
ENGW 1111	First-Year Writing	4
SEMESTER 4		
ENGW 3306	Advanced Writing in the Health Professions	4

Program Requirement

206 total semester hours required

Plan of Study

Six Years, Three Co-ops

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211	4	CHEM 1214	4	Vacation	0	Vacation	0
CHEM 1	1	CHEM 1	1				
CHEM 1213	0	CHEM 1216	0				

PHMD 1	1	BIOL 11	4
PSYC 1101	4	BIOL 1114	1
ENGW 1	4	PHMD 1	1
BIOL 1111	4	MATH 1241	4
BIOL 11	1	Elective	4
	19		19
			0
			0

Year 2

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
CHEM 2311	4	CHEM 2313	4	Co-op	0
CHEM 2	1	CHEM 2	1		
CHEM 2319	0	CHEM 2320	0		
PHSC 2	3	ENGW 3	4		
PHSC 2302	1	PHSC 2303	3		
PHYS 1	4	PHSC 2	1		
PHYS 1150	1	PHMD 1201	2.5		
Elective	4	PHMD 1	0.5		
	18		16		0

Year 3

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PHSC 2320	4	Co-op	0	PHMD 2310	2
PHSC 4	5			PHMD 2	0.5
PHMD 2350	3			PHMD 5250	3
PHSC 3	4			PHSC 3	4
				PHSC 3419	1
				PHSC 4	5
	16		0		15.5

Year 4

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
Co-op	0	PHSC 3430	3	PHSC 5360	4
		PHSC 2	3	PHMD 5	3
		PHMD 3450	3	PHMD 4621	6
		PHMD 4	6	PHMD 4	1
		PHMD 4612	1	PHMD 4623	0.5
				Elective capston	0-4
	0		16		14.5-18.5

Year 5

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PHMD 4631	6	PHMD 4641	6	PHMD advanced practice experience	6
PHMD 4	1	PHMD 4	1	PHMD advanced practice experier	6
PHMD 4633	0.5	PHMD 4643	0.5		

PHMD	2	PHMD	2
Elective/ capstone	2-4	Elective/ capstone	2-4
Elective capston	0-4	PHMD	1
	Elective/ capstone		0-4
11.5-17.5		12.5-18.5	

12

Year 6

Fall	Hours	Spring	Hours
PHMD advanced practice experience	6	PHMD advanced practice experience	6
PHMD advanc practice experier	6	PHMD advanc practice experier	6
12		12	

Total Hours: 194-210

Accelerated Bachelor/Graduate Degree Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See additional information on PlusOne Bachelor's/Master's programs (<https://bouve.northeastern.edu/health-sciences/programs>).

BS in Health Science/MPH—Master of Public Health

The Department of Health Sciences offers a combined undergraduate Bachelor of Science in Health Science and a Master of Public Health in Urban Health. This program allows undergraduate health science majors to complete both degrees in a shorter amount of time than it would take to do each program separately. Students in the combined degree program will meet the core curriculum requirements for both a BS and an MPH degree. Fifteen credits of the MPH degree are taken during the final undergraduate year, and the MPH degree is completed over one additional year.

Undergraduate students can enter the PlusOne Accelerated Program (BS/MPH) via two ways:

- Undergraduate health science majors apply to the PlusOne program through the graduate school's Apply Yourself system in the spring semester of their junior year.
- Those students who were offered conditional acceptance to the PlusOne program as part of their undergraduate acceptance automatically matriculate into the program if they maintain at least a 3.500 cumulative grade-point average, take a health-related co-op, and officially commit to this program in the spring semester of their junior year. No additional application is required.

Once admitted, students may count a maximum of 15 semester hours of graduate credit toward the undergraduate degree. Consult the department for information on this program.

PharmD—Doctor of Pharmacy/MPH—Master of Public Health

Undergraduate pharmacy majors enrolled in the joint Doctor of Pharmacy (PharmD)/Master of Public Health (MPH) program have the opportunity to take graduate courses in the MPH program while earning their PharmD. Up to 15 credit hours of these courses count toward both their PharmD and MPH, allowing these students to earn their MPH in a shorter amount of time than it would take to earn it separately from their PharmD.

Undergraduate pharmacy students can enter the PlusOne Accelerated Program (PharmD/MPH) by applying to the PlusOne program through the graduate school's Apply Yourself system in the spring semester of their P2 year.

Once admitted, students may count a maximum of 16 semester hours of graduate credit toward the undergraduate degree. Consult the department for information on this program.

Psychology, BS/Applied Behavior Analysis, MS

The Department of Psychology in the College of Science and the Department of Applied Psychology in Bouvé College jointly offer a PlusOne program in applied behavior analysis. Undergraduate psychology majors have the opportunity to take graduate courses in applied behavior analysis during their final year of undergraduate studies (up to 15 credits) that count toward the student's undergraduate and graduate degrees. As a result, students in the PlusOne program may complete the Master of Science in three semesters after obtaining their undergraduate degree. Undergraduate students interested in this program are encouraged to apply during the fall of their junior year using Bouvé College's Apply Yourself application system. Questions regarding this program may be directed to the program director for the applied behavior analysis programs in the Department of Applied Psychology.

Programs

- Health Science, BS/Law, JD
- Health Science, BS/Public Health, MPH
- Pharmacy, PharmD/Public Health, MPH
- Psychology, BS/Applied Behavior Analysis, MS

Website (<http://www.northeastern.edu/cos>)

Kenneth W. Henderson, PhD, Dean

Brent Nelson, PhD, Associate Dean, Undergraduate Affairs

David E. Budil, PhD, Associate Dean, Research and Graduate Affairs

Frederick C. Davis, PhD, Associate Dean, Faculty Affairs, Diversity and Inclusion

TBD, Associate Dean, Administration and Finance

James Poulos, MA, Associate Dean, Development

Lauren Machunis, MS, Assistant Dean for Undergraduate Advising and Enrollment Management

Kellie Melchin, MS, Assistant Dean for Graduate Administration

Dean's Office

115 Richards Hall

617.373.5085

617.373.8583 (fax)

cos@northeastern.edu

Student Services Office

206 Mugar Life Sciences Building

617.373.4475

COSAdvising@northeastern.edu

The College of Science (COS) offers instructional programs that are at the forefront of discovery, invention, and innovation in the physical sciences, life sciences, linguistics, and mathematics. Our programs are designed to give students a deep understanding and hands-on experience in traditional and emerging interdisciplinary fields such as chemical biology, cognition and neuroscience, marine science, biochemistry, nanoscience, and network science.

The college places a strong emphasis on the experiential learning model and seeks to provide students with a wide array of opportunities to explore innovative, interdisciplinary collaborations through cooperative educational work assignments, service-learning, undergraduate research, internships, study-abroad programs, and active participation in our award-winning student chapters of professional associations. The college seeks to provide students with the best possible foundation for achieving their goals, whether they seek to attend graduate school, professional school, or immediately pursue a career upon graduation.

The college offers Bachelor of Arts (BA), Bachelor of Science (BS), and Bachelor of Science/Master of Science (BS/MS) (PlusOne programs) degrees in a number of majors, as well as a Bachelor of Science/ Doctor of Philosophy (BS/PhD) in physics and many interdisciplinary programs, and emphasizes the value of a solid general education through the NU Core. Students may choose a four- or five-year experiential learning plan in most programs. Either plan offers co-op opportunities, often in an area related to the student's chosen academic area. Students are normally eligible to participate in co-op in the second semester of their sophomore year.

Many programs are flexible enough to allow students to pursue a double major, a major and a minor, or one of the college's specific combined majors. The college also offers students the opportunity to create an independent major in cases where their interests and goals are not met by a specific major program.

PlusOne Programs

Many programs and departments such as biochemistry, biology, chemistry and chemical biology, mathematics, and physics offer academically strong students the option of obtaining their BS and MS degree in five years.

College Requirements

All students in the College of Science must successfully complete the university requirements of NUPath (p. 37). In addition, students pursuing a Bachelor of Arts degree must fulfill the BA requirements (p. 40). Students pursuing a combined major involving a program in the College of Social Sciences and Humanities must, in addition, fulfill the Experiential Liberal Arts (<https://www.northeastern.edu/cssh/undergraduate>) (ELA) requirement. The Experiential Liberal Arts Course Designation is part of a CSSH framework that emphasizes integration of experiential learning along with diversity and inclusion at key points in the curriculum. Students will ordinarily fulfill this requirement through an ELA-designated course within the major; any CSSH course on a Dialogue of Civilizations; or any CSSH service-learning course. Please consult your academic advisor and your degree audit for the ELA options for your major.

Academic Advising

The College of Science has an academic advising system that consists of professional advisors located in the College of Science Student Services Office in 206 Mugar Hall and faculty advisors located in the college's department and program offices. Detailed advising information is available on the college website (<http://www.northeastern.edu/cos>). Prelaw (<http://www.northeastern.edu/prelaw>) advising and prehealth (<http://www.northeastern.edu/prehealth>) advising are also available.

Graduation Clearance Process

Students in the College of Science are required to meet with an academic advisor in the College of Science Student Services Office in 206 Mugar Hall to determine their remaining graduation requirements. Some departments also require a meeting with a faculty advisor in their major/program. This should be completed in the junior year to ensure ample time to complete any outstanding requirements.

Academic Progression Standards

In addition to meeting university progression standards, it is expected that full-time science students enroll in four courses with appropriate labs and recitations and successfully complete at least 12 semester hours each academic semester with an acceptable GPA as noted below. Any exceptions to the course load requirement must be approved in writing by the student's academic advisor prior to the start of each semester. Pass/fail courses are restricted to electives outside of the major, minor, and NUPath requirements.

GRADUATION REQUIREMENTS

A minimum cumulative GPA requirement of 2.000 in major courses and a minimum cumulative GPA requirement of 2.000 overall are required for graduation. *Note:* The university requires a minimum grade of C for First-Year Writing and Advanced Writing requirements.

CRITERIA FOR ACADEMIC PROBATION

Full-time students in the College of Science will be placed on academic probation effective for the following academic semester for any of the

reasons noted below. A notation of the academic probation action will appear on the internal record but not on the permanent transcript.

First-year Students:

- Not maintaining a semester GPA of at least a 1.800 at the end of each full-term semester (fall, spring) of the first-year curriculum
- Not earning at least 12 semester hours at the end of each semester of the first-year curriculum
- Not earning at least 24 semester hours at the end of the two full-term semesters (fall, spring) of the first-year curriculum
- Accumulating three outstanding course deficiencies (grades of F, I, W, NE, U, or missing grades)

Upper-class and Transfer Students:

- Not earning at least 12 semester hours in the academic full-term semester (fall, spring) just completed
- Not maintaining an overall cumulative GPA of at least 2.000 at the end of each full-term academic semester (fall, spring)
- Accumulating three outstanding course deficiencies (grades of F, I, W, NE, U, or missing grades)
- Not following a program of study approved by the student's academic advisor

Academic Dismissal from Major

Not maintaining a GPA of at least a 2.000 in the major at the end of the second academic full-term semester of the curriculum and at the end of each full-term academic semester (fall, spring) thereafter. Students dismissed from their major but otherwise are eligible to remain an active student within the university, are allowed to continue within the College of Science as a transitional student for up to two semesters.

ACADEMIC DISMISSAL FROM UNIVERSITY

Students who remain on probation after two full-term academic semesters may be dismissed from the university. This action may appear on the transcript at the end of the second probationary semester. In addition, students who have below a 1.000 GPA or fewer than 4 earned semester hours in any semester or cumulatively may be dismissed at the discretion of their college. Students may appeal this decision to the Academic Standing Committee of their college (see following section). International students should consult with an advisor in the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) to discuss the impact of an academic dismissal as it relates to nonimmigrant visa status.

Behavioral Neuroscience

Website (<http://www.northeastern.edu/cos/bns>)

M. Jade Zee, PhD

Assistant Teaching Professor and Program Director

Jennifer Ingemi, PhD

Assistant Teaching Professor and Assistant Director

203 Mugar Life Sciences Building
bns@northeastern.edu
617.373.2852

The behavioral neuroscience major is an interdepartmental program for undergraduates, supported by neuroscience faculty across the College of Science. The field of neuroscience focuses on brain mechanisms and how they give rise to behavioral functions in humans and animals.

Behavioral neuroscience combines the disciplines of biology and psychology with a strong background in basic physical sciences and mathematics. The goal is to achieve an understanding of the anatomy and physiology of nerve cells, chemical transmission, neural circuits, fundamental biological processes such as inheritance and development, and then to see how these biological events give rise to normal and pathological behavior. The primary objective of the neuroscience major is to draw together faculty and students who are interested in this interdisciplinary topic and to provide undergraduates with an education in the field. This major also seeks to prepare students for advancement to graduate programs in the field of neuroscience or in biology or psychology programs with an emphasis in neurobiology. An additional objective of this major is to prepare its students for admission to medical school or other health profession programs. Finally, the goal of the curriculum is to prepare students for employment in clinical settings or in allied fields such as the biotech industry.

Behavioral Neuroscience Minor

The behavioral neuroscience minor consists of five courses requiring a minimum of 20 semester hours of study. Students are required to take one intermediate-level survey course and four behavioral neuroscience core courses, two from each of the parent departments of the discipline (i.e., psychology and biology). All students regardless of their major, including those majoring in psychology and biology, may minor in behavioral neuroscience.

Programs

Bachelor of Science (BS)

- Behavioral Neuroscience (p. 469)

Minor

- Behavioral Neuroscience (p. 472)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Behavioral Neuroscience, BS

The behavioral neuroscience curriculum focuses on the biological bases underlying behavior under normal and pathological states. The program combines the disciplines of biology and psychology with a strong background in basic physical sciences and mathematics to understand how the behavior of humans and animals is controlled by physiological systems. Students gain a solid foundation in the anatomical and functional specializations of the brain and neural mechanisms from neurons to circuits to networks. Students then choose from a range of advanced electives, including those that make up the behavioral neuroscience core, to delve deeply into diverse specializations and current topics in the field.

Note: Due to overlap in course content, double majoring in behavioral neuroscience with any of the following majors is not permitted: psychology, biology, cell and molecular biology, or biochemistry. Students interested in interdisciplinary fields such as neurophilosophy, music therapy, music cognition, or the interface of neuroscience with the criminal justice system are encouraged to double major in philosophy, music, or criminal justice. Five-year, two co-op patterns of attendance exist for double majors in these complementary fields. Other combined or independent majors with behavioral neuroscience are not permitted.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Behavioral Neuroscience Core Requirements

Code	Title	Hours	
Complete six of the following courses. At least three must be numbered in the 4000–5999 range:			
BIOL 3403	Animal Behavior	24-25	
BIOL 3405	Neurobiology		
BIOL 3601	Neural Systems and Behavior		
BIOL 3605	Developmental Neurobiology		
BIOL 4705	Neurobiology of Cognitive Decline		
BIOL 5587	Comparative Neurobiology		
BIOL 5595	Cell and Molecular Neuroscience		
BIOL 5601	Multidisciplinary Approaches in Motor Control		
PSYC 3200	Clinical Neuroanatomy		
PSYC 3506	Neuropsychology of Fear		
PSYC 3508	Behavioral Endocrinology		
PSYC 3510	Brain, Behavior, and Immunity		
PSYC 4510	Psychopharmacology		
PSYC 4512	Neuropsychology		
PSYC 4514	Clinical Neuroscience		
PSYC 4570	Behavioral Genetics		
PT 5410 and PT 5411	Functional Human Neuroanatomy and Lab for PT 5410		
One course may be a research or experiential course:			
BIOL 4991	Research		
BIOL 4994	Internship		
BIOL 4970	Junior/Senior Honors Project 1		
BIOL 4971	Junior/Senior Honors Project 2		
BNSC 4994	Internship		
BNSC 4970	Junior/Senior Honors Project 1		
BNSC 4971	Junior/Senior Honors Project 2		
PSYC 4624	Laboratory in Affective Science		
PSYC 4626	Laboratory in Life-Span Emotional Development		
PSYC 4991	Directed Study Research		
PSYC 4994	Internship in Psychology		
PSYC 4965	Undergraduate Teaching Experience		
PSYC 4970	Junior/Senior Honors Project 1		
PSYC 4971	Junior/Senior Honors Project 2		

Behavioral Neuroscience Advanced Courses

Code	Title	Hours
Psychology Elective		
An additional behavioral neuroscience core course may be used to fulfill this requirement.		

Complete one of the following: 4

PSYC 3358	Behavior Therapies
PSYC 3404	Developmental Psychology
PSYC 3406	Abnormal Psychology
PSYC 3450	Learning and Motivation
PSYC 3451	Learning Principles and Behavior Analysis
PSYC 3452	Sensation and Perception
PSYC 3464	Psychology of Language
PSYC 3466	Cognition
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development

Biology Elective

Complete one of the following: 4-5

BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321
BIOL 3401	Comparative Vertebrate Anatomy
BIOL 3409	Current Topics in Biology
BIOL 3603	Mammalian Systems Physiology
BIOL 3609	Developmental Biology
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611
BIOL 4707	Cell and Molecular Biology
BIOL 5306	Biological Clocks
BIOL 5543	Stem Cells and Regeneration
BIOL 5573	Medical Microbiology
BIOL 5581	Biological Imaging
BIOL 5591	Advanced Genomics

Capstone Course

Complete one of the following: 4

BIOL 4701	Biology Capstone
PSYC 4650 to PSYC 4678	

Behavioral Neuroscience Major Requirements

Code	Title	Hours	
Foundation Courses			
BNSC 1000	Behavioral Neuroscience at Northeastern	4	
PSYC 1101	Foundations of Psychology		
PSYC 2320	Statistics in Psychological Research		
PSYC 3458	Biological Psychology		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107		
BIOL 2299	Inquiries in Biological Sciences		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301		
BIOL 2309	Biology Project Lab		
Breadth Courses			
MATH 1251	Calculus and Differential Equations for Biology 1		
or MATH 1241	Calculus 1		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211		
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214		

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313
Complete one of the following: 5	
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161
PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171

Behavioral Neuroscience Major Credit/GPA Requirement

Complete 90 semester hours in the major with a minimum 2.000 GPA.

Due to overlap in course content, double majoring in behavioral neuroscience with any of the following majors is not permitted: psychology, biology, cell and molecular biology, or biochemistry.

Program Requirement

132 total semester hours required

Plan of Study

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1251	4	ENGW 1111	4	BIOL 2301 and BIOL 2302	5	Vacation	0
PSYC 1101	4	PSYC 3458	4	Adv PSYC elective	4		
BIOL 1107 and BIOL 1108	5	BIOL 2299	4				
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5				
BNSC 1000	1						
		19			17		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	CHEM 2313 and CHEM 2314	5	BNS core course 3	4	Co-op	0
PSYC 2320	4	BIOL 2309	4	Elective	4		
BNS core course 1	4	BNS core course 2	4				
Elective	4	Elective	4				

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 1145 and PHYS 1146	5	ENGW 3307	4	Co-op	0
		BNS core course 4	4	Elective	4		
		Adv BIOL elective	5				
		Elective	4				
		0			18		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BNS core course 5	4				
		BNS core course 6	5				
		Capstone	4				
		Elective	5				
		0			18		

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1251	4	ENGW 1111	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3458	4				
BIOL 1107 and BIOL 1108	5	BIOL 2299	4				
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5				
BNSC 1000	1						
		19			17		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	Co-op	0	Co-op	0	CHEM 2313 and CHEM 2314	5
CHEM 2311 and CHEM 2312	5					Elective	4
BNS core course 1	4						
Elective	4						
EESC 2000	1						
		19			0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2309	4	Co-op	0	Co-op	0	Vacation	0
PSYC 2320	4						

BNS core course 2	4			
Elective	4			
	16	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1145 and PHYS 1146	5	Co-op	0	Co-op	0	Vacation	0
BNS core course 3	4						
Adv PSYC elective	4						
Elective	4						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
BNS core course 4	4	BNS core course 5	4
Adv BIOL elective	5	BNS core course 6	5
ENGW 3307	4	Capstone course	4
Elective	5	Elective	4
	18		17

Total Hours: 132

Behavioral Neuroscience, Minor

The behavioral neuroscience minor allows all students, including those majoring in biology and psychology, the opportunity to complement their major plans of study with an interdisciplinary minor in behavioral neuroscience.

Minor Requirements

Students are required to take one intermediate course followed by four behavioral neuroscience core courses, two from each of the parent departments of the discipline (i.e., psychology and biology).

Intermediate Course

Code	Title	Hours
PSYC 3458 or BIOL 3405	Biological Psychology Neurobiology	4

Psychology Core Courses

Code	Title	Hours
Complete two of the following:		8
PSYC 3200	Clinical Neuroanatomy	
PSYC 3506	Neuropsychology of Fear	
PSYC 3508	Behavioral Endocrinology	
PSYC 3510	Brain, Behavior, and Immunity	
PSYC 4510	Psychopharmacology	
PSYC 4512	Neuropsychology	
PSYC 4514	Clinical Neuroscience	
PSYC 4570	Behavioral Genetics	

Biology Core Courses

Code	Title	Hours
Complete two of the following courses not completed above:		8
BIOL 3403	Animal Behavior	
BIOL 3405	Neurobiology	
BIOL 3601	Neural Systems and Behavior	
BIOL 3605	Developmental Neurobiology	
BIOL 4705	Neurobiology of Cognitive Decline	
BIOL 5587	Comparative Neurobiology	
BIOL 5595	Cell and Molecular Neuroscience	

Credit/GPA Requirement

20 total semester hours required
2.000 GPA required in the minor

Biochemistry

Website (<http://www.northeastern.edu/biochemistry>)

Susan Powers-Lee, PhD
Professor and Program Director

203 Mugar Life Sciences Building
617.373.2852

Morline Gordon-Grier, Administrative Secretary,
m.gordongrier@northeastern.edu

Advising website (<http://www.northeastern.edu/biochemistry>)

Biochemistry focuses on the chemical processes occurring in the wide variety of living systems and touches essentially all aspects of our own lives. Our Northeastern program engages you in two integrated paths to a career in biochemistry: rigorous course work that is designed to prepare you to interpret the ever-expanding knowledge base and hands-on learning that positions you to leverage cutting-edge technology to solve fundamental problems in the chemistry of life.

After required basic course work in biochemistry, biology, chemistry, physics, and mathematics, our majors select elective courses that reflect many areas of biochemistry including neuroscience, bioorganic chemistry, stem cell and regenerative biology, microbial biotechnology, and systems biology and engineering.

In our interdisciplinary program, students take advantage of faculty-mentored research guided by investigators from bioengineering, biology, chemical engineering, chemistry, pharmaceutical sciences, physics, psychology, and other academic units.

Northeastern's signature co-op program provides complementary opportunities in world-class biotechnology companies, hospitals, and research facilities as close as Boston and as far as your global interest takes you.

Our biochemistry program prepares students to enter the job market directly or go on to graduate, medical, veterinary, dental, law, or business school. Our graduates are qualified for a wide range of careers that span academics, industry, government, and medicine, working in laboratory or clinical research, regulation and quality control, production, marketing, or information systems.

Programs

Bachelor of Science (BS)

- Biochemistry (p. 473)
- Data Science and Biochemistry (p. 354)

Bachelor of Science in Chemical Engineering (BSCHE)

- Chemical Engineering and Biochemistry (p. 381)

Minor

- Biochemistry, Minor (p. 479)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Biochemistry, BS

Website (<http://www.northeastern.edu/biochemistry>)

Susan Powers-Lee, PhD

Professor and Program Director

203 Mugar Life Sciences Building
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In our interdisciplinary program, students take advantage of faculty-mentored research guided by investigators from bioengineering, biology, chemical engineering, chemistry, pharmaceutical sciences, physics, psychology, and other academic units.

Northeastern's signature co-op program provides complementary opportunities in world-class biotechnology companies, hospitals, and research facilities as close as Boston and as far as your global interest takes you.

Our biochemistry program prepares students to enter the job market directly or go on to graduate, medical, veterinary, dental, law, or business school. Our graduates are qualified for a wide range of careers that span academics, industry, government, and medicine, working in laboratory or clinical research, regulation and quality control, production, marketing, or information systems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Biochemistry Major Requirements

Code	Title	Hours
Introduction to College		
BIOC 1000	Biochemistry at Northeastern	1
Biology Foundations		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Techniques</i>		
BIOL 2309	Biology Project Lab	4
Genetics and Molecular Biology		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
General Chemistry 1		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
General Chemistry 2		
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
Organic Chemistry 1		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
Organic Chemistry 2		
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Physical Chemistry		
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	5
Biochemistry Courses		
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
BIOL 4707	Cell and Molecular Biology	4
CHEM 4620	Introduction to Protein Chemistry	4
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
Capstone		
BIOL 4701 or CHEM 4750	Biology Capstone Senior Research	4

Biology and Chemistry Advanced Electives

Complete three courses for a total of at least 12 semester hours from biology and chemistry with a minimum of one course from each department. Up to 4 semester hours may be research in a biology or chemistry faculty lab from the list "Research Option" below.

Code	Title	Hours
Biology		
BIOL 2311 to BIOL 5999		
Chemistry		
CHEM 2310 to CHEM 5999		
Research Option		
Up to 4 semester hours may be research in a biology or chemistry faculty lab:		4
BIOC 4991	Research	
BIOC 4970	Junior/Senior Honors Project 1	
BIOC 4971	Junior/Senior Honors Project 2	
BIOC 4994	Internship	
BIOL 4991	Research	
BIOL 4970	Junior/Senior Honors Project 1	
CHEM 4901	Undergraduate Research	
CHEM 4750	Senior Research	
CHEM 4970	Junior/Senior Honors Project 1	

Biochemistry Breadth Courses

A minimum GPA of 2.000 is required for the biochemistry breadth courses.

Code	Title	Hours
Mathematics Courses		
Complete one of the following options:		8
<i>Option 1</i>		
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1252	Calculus and Differential Equations for Biology 2	
<i>Option 2</i>		
MATH 1341	Calculus 1 for Science and Engineering	
MATH 1342	Calculus 2 for Science and Engineering	
Physics Courses		
<i>Physics 1</i>		
Complete a lecture and lab set for Physics 1:		5
PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
<i>Physics 2</i>		
Complete a lecture and lab set for Physics 2:		5
PHYS 1175 and PHYS 1176 and PHYS 1177	Physics 2 for Bioscience and Bioengineering and Lab for PHYS 1175 and Interactive Learning Seminar for PHYS 1175	

PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165

Biochemistry Major Credit/GPA Requirements

Complete 92 semester hours in the major with a cumulative GPA of 2.000.

Due to overlap in course content, double majoring in biochemistry and biology, biochemistry and behavioral neuroscience, or biochemistry and chemistry is not permitted.

Program Requirement

136 total semester hours required

Plan of Study

Please note that these are sample plans of study. While the requirements are the same for all students, individual schedules may vary.

Four Years, Two Co-ops in Summer 2/Fall

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Elective 3	4		
BIOL 1108	1	CHEM 1214	4	BIOL 2302	1	Elective 4	4		
CHEM 1211	4	CHEM 1215	1	Elective 2	4				
CHEM 1212	1	CHEM 1216	0						
CHEM 1213	0	ENGW 1111	4						
MATH 1251	4	MATH 1252	4						
Elective 1	4								
BIOC 1000	1								
		19			17			9	8
Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
BIOL 2309	4	CHEM 2313	4	BIOL 3611	4	Co-op			
CHEM 2311	4	CHEM 2314	1	BIOL 3612	1				
CHEM 2312	1	PHYS 1155	3	Elective 8	4				
PHYS 1151	3	PHYS 1156	1						
PHYS 1152	1	PHYS 1157	1						
PHYS 1153	1	Elective 6	4						
Elective 5	4	Elective 7	4						
		EESC 2000	1						
		18			19			9	0
Year 3									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Co-op		CHEM 3431	4	BIOL 4707	4	Co-op			
		CHEM 3432	1	Elective 10	4				
		CHEM 4620	4						
		ENGW 3307	4						
		Elective 9	4						
		0			17			8	0

Year 4

Fall	Hours
BIOL or CHEM advanced elective	5
BIOL or CHEM advanced elective	5
BIOL or CHEM advanced elective	5
CHEM 4750 or BIOL 4701	4
Total	19

Total Hours: 143

Four Years, Two Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Elective 3	4
BIOL 1108	1	CHEM 1214	4	BIOL 2302	1	Elective 4	4
CHEM 1211	4	CHEM 1215	1	Elective 2	4		
CHEM 1212	1	CHEM 1216	0				
CHEM 1213	0	ENGW 1111	4				
MATH 1251	4	MATH 1252	4				
Elective 1	4						
BIOC 1000	1						
Total	19		17		9		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2309	4	Co-op		Co-op		CHEM 2313	4
CHEM 2311	4					CHEM 2314	1
CHEM 2312	1					Elective 6	4
PHYS 1151	3						
PHYS 1152	1						
PHYS 1153	1						
Elective 5	4						
EESC 2000	1						
Total	19		0		0		9

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 3611	4	Co-op		Co-op		BIOL 4707	4
BIOL 3612	1					Elective 8	4
PHYS 1155	3						
PHYS 1156	1						
PHYS 1157	1						
ENGW 3307	4						
Elective 7	4						
Total	18		0		0		8

Year 4

Fall	Hours	Spring	Hours
CHEM 3431	4	BIOL or CHEM advanced elective	5
CHEM 3432	1	BIOL or CHEM advanced elective	5
CHEM 4620	4	CHEM 4750 or BIOL 4701	4
BIOL or CHEM advanced elective	5	Elective 10	4
Elective 9	4		
Total	18		18

Total Hours: 143

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	
BIOL 1108	1	CHEM 1214	4	BIOL 2302	1		
CHEM 1211	4	CHEM 1215	1	Elective 2	4		
CHEM 1212	1	CHEM 1216	0				
CHEM 1213	0	MATH 1252	4				
MATH 1251	4	ENGW 1111	4				
Elective 1	4						
BIOC 1000	1						
Total	19		17		9		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2309	4	CHEM 2313	4	BIOL 3611	4	Co-op	
CHEM 2311	4	CHEM 2314	1	BIOL 3612	1		
CHEM 2312	1	PHYS 1155	3	Elective 6	4		
PHYS 1151	3	PHYS 1156	1				
PHYS 1152	1	PHYS 1157	1				
PHYS 1153	1	Elective 4	4				
Elective 3	4	Elective 5	4				
		EESC 2000	1				
Total	18		19		9		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		BIOL 4707	4	Vacation		Co-op	
		CHEM 3431	4				
		CHEM 3432	1				
		ENGW 3307	4				
		Elective 7	4				
Total	0		17		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CHEM 4620	4	Vacation		Co-op	

BIOL or CHEM advanced elective	5			
Elective 8	4			
Elective 9	4			
	0	17	0	0

Year 5

Fall	Hours	Spring	Hours
Co-op	BIOL or CHEM advanced elective		5
	BIOL or CHEM advanced elective		5
	CHEM 4750 or BIOL 4701		4
	Elective 10		4
	0	18	

Total Hours: 143

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	
BIOL 1108	1	CHEM 1214	4	BIOL 2302	1		
CHEM 1211	4	CHEM 1215	1	Elective 2	4		
CHEM 1212	1	CHEM 1216	0				
CHEM 1213	0	MATH 1252	4				
MATH 1251	4	ENGW 1111	4				
Elective 1	4						
BIOC 1000	1						
	19		17		9		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2309	4	Co-op		Co-op		CHEM 2313	4
CHEM 2311	4					CHEM 2314	1
CHEM 2312	1					Elective 4	4
PHYS 1151	3						
PHYS 1152	1						
PHYS 1153	1						
Elective 3	4						
EESC 2000	1						
	19		0		0		9

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 3611	4	Co-op		Co-op		Vacation	
BIOL 3612	1						
PHYS 1155	3						
PHYS 1156	1						
PHYS 1157	1						
ENGW 3307	4						

Elective 5	4			
	18	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 4707	4	Co-op		Co-op		Vacation	
CHEM 3431	4						
CHEM 3432	1						
CHEM 4620	4						
Elective 6	4						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
BIOL or CHEM advanced elective	5	BIOL or CHEM advanced elective	5
BIOL or CHEM advanced elective	5	CHEM 4750 or BIOL 4701	4
Elective 7	4	Elective 9	4
Elective 8	4	Elective 10	4
	18		17

Total Hours: 143

Data Science and Biochemistry, BS

The Data Science and Biochemistry Major combines computer science, biochemistry, biology, information science, mathematics, and statistics into an integrated curriculum. The program engages students in rigorous course work designed to prepare students to interpret the ever-expanding knowledge base.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Data Science Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Discrete Structures		
A grade of C- or higher is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5

Computer Science Foundations

A grade of C– or higher is required:

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Data Science Foundations

DS 4100	Data Collection, Integration, and Analysis	4
DS 4200	Information Presentation and Visualization	4
DS 4300	Large-Scale Information Storage and Retrieval	4
DS 4400	Machine Learning and Data Mining 1	4

Data Science Upper-Division Elective

Complete one of the following, not taken to fulfill previous requirements:

CS 2500 or higher, except CS 5010		
IS 2000 or higher, except IS 4900		
DS 2000 or higher, except DS 4900		

Supporting Courses for Data Science

THTR 1170	The Eloquent Presenter	1
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Statistics Foundations

Complete one of the following:		4
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
MATH 3081	Probability and Statistics	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111 or ENGW 1102	First-Year Writing or First-Year Writing for Multilingual Writers	4
Advanced Writing in the Disciplines		
ENGW 3302 or ENGW 3315	Advanced Writing in the Technical Professions or Interdisciplinary Advanced Writing in the Disciplines	4

Biochemistry Requirements

Code	Title	Hours
Biology Foundations		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
BIOL 2299	Inquiries in Biological Sciences	4
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 2309	Biology Project Lab	4
Chemistry Foundations		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Mathematics Foundations

MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4

Biochemistry Foundations

BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
CHEM 2331 and CHEM 2332 or CHEM 4620	Bioanalytical Chemistry and Lab for CHEM 2331 or Introduction to Protein Chemistry	4-5

Integrative Requirement

Code	Title	Hours
Integrative Courses		
BINF 6308	Bioinformatics Computational Methods 1	4
BINF 6309	Bioinformatics Computational Methods 2	4
Complete one of the following:		4
BIOL 4701	Biology Capstone	
CHEM 4750	Senior Research	
DS 4900	Data Science Senior Project	

Required General Electives

Code	Title	Hours
Complete three general electives.		12

Major GPA Requirement

Minimum 2.000 GPA required in all CS, IS, and DS courses

Program Requirement

136 total semester hours required

Chemical Engineering and Biochemistry, BSCHE

This intercollege combined major serves students who would like to explore their interest in biochemistry while earning the benefit of a Bachelor of Science degree in chemical engineering. The program combines the fundamentals of biochemistry with the engineering skills necessary for scale-up of biochemical processes. Successful graduates will be well-qualified to enter the growing biotechnology industry and be able to converse from the chemistry of organisms to the design of vessels for successful synthesis of cells and pharmaceuticals.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in CHME courses

Mathematics/Science Requirement

Complete 44 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
BIOL 4707	Cell and Molecular Biology	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
Advanced Biology Elective		
Complete one course in the following range: BIOL 2311 to BIOL 5999		4
Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Advanced Science Requirement

Complete 23 semester hours in advanced science as indicated below.

Code	Title	Hours
BIOL 1115	General Biology 1 for Engineers	4
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	5
Advanced Chemistry Elective		
Complete one course in the following range: CHEM 2310 to CHEM 5999		4

Engineering

Complete 50 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 2320	Chemical Engineering Thermodynamics 1	4
CHME 3312	Transport Processes 2 and Separations	4
CHME 3315	Chemical Engineering Experimental Design 1	4
CHME 3322	Chemical Engineering Thermodynamics 2	4
CHME 4315	Chemical Engineering Experimental Design 2	4
CHME 4510	Chemical Engineering Kinetics	4
CHME 4512	Chemical Engineering Process Control	4
CHME 4701	Capstone Design 1: Process Analysis	4
CHME 4703	Capstone Design 2: Chemical Process Design	4

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Complete 4 semester hours in professional development as indicated below.

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CHME 2000	Introduction to Engineering Co-op Education	1
CHME 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Additional NUpath Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3307	Advanced Writing in the Sciences	
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements Through General Electives

NUPath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Complete four academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

145 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151 (ND)	4	MATH 1342 (FQ)	4	CHME 2308	4	Vacation	0
CHEM 1153	0	PHYS 1151 (ND)	3	MATH 2321	4		
ENGW 1111	4	PHYS 1152 (AD)	1				
GE 1000	1	PHYS 1153	1				
GE 1501	4	GE 1502 (ER)	4				
MATH 1341 (FQ)	4	General elective	4				
		17	17	8			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1115 (ND)	4	CHEM 2313	4	BIOL 2301 and BIOL 2302	5	Co-op	0
CHEM 2311	4	CHEM 2314	1	General elective	4		
CHEM 2312	1	CHEM 2320	0				
CHEM 2319	0	CHEM 2331 (AD, WI)	4				
CHME 2310	4	CHEM 2332	1				
MATH 2341	4	CHME 2000	1				
		CHME 2320	4				
		General elective	4				
		17	19	9			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3312	4	BIOL 3611	4	Co-op	0
		CHME 3315 (Chem. Eng. Lab 1)	4	BIOL 3612 (WI)	1		

CHME 3322	4	General elective	4		
ENGW 3315	4				
0	16	9	0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BIOL 4707	4	Vacation	0	Co-op	0
		CHME 3000	1				
		CHME 4315 (Chem.Eng.Lab 2)	4				
		CHME 4510	4				
		CHME 4701	4				
		0	17	0			0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CHME 4512	4
		CHME 4703 (EI, WI, CE)	4
		Advanced chemistry elective	4
		Advanced biology elective	4
		0	16

Total Hours: 145

Biochemistry, Minor

The biochemistry minor allows students to engage in interdisciplinary study of biochemistry to complement their major plans of study.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

The biochemistry minor is not available to majors in biology or cell and molecular biology due to curricular overlap.

Required Courses

Code	Title	Hours
Core Courses		
BIOL 4707	Cell and Molecular Biology	4
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
CHEM 4620	Introduction to Protein Chemistry	4

Biology Core Course

Code	Title	Hours
Complete one of the following course options:		
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	4
BIOL 2327	Human Parasitology	
BIOL 3405	Neurobiology	
BIOL 3409	Current Topics in Biology	

BIOL 3605	Developmental Neurobiology
BIOL 3609	Developmental Biology
BIOL 5306	Biological Clocks
BIOL 5307 and BIOL 5308	Biological Electron Microscopy and Lab for BIOL 5307
BIOL 5499	Plant Biotechnology
BIOL 5541	Endocrinology
BIOL 5543	Stem Cells and Regeneration
BIOL 5549	Microbial Biotechnology
BIOL 5573	Medical Microbiology
BIOL 5581	Biological Imaging
BIOL 5583	Immunology
BIOL 5591	Advanced Genomics
BIOL 5593	Cell and Molecular Biology of Aging

Chemistry Core Course

Code	Title	Hours
Complete one of the following course options:		4
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	
CHEM 4621 and CHEM 4622	Introduction to Chemical Biology and Lab for CHEM 4621	
CHEM 4628 and CHEM 4629	Introduction to Spectroscopy of Organic Compounds and Identification of Organic Compounds	
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	
CHEM 5611	Analytical Separations	
CHEM 5612	Principles of Mass Spectrometry	
CHEM 5613	Optical Methods of Analysis	
CHEM 5616 and CHEM 5617	Protein Mass Spectrometry and Protein Mass Spectrometry Laboratory	
CHEM 5625	Chemistry and Design of Protein Pharmaceuticals	
CHEM 5638	Molecular Modeling	
CHEM 5676	Bioorganic Chemistry	

GPA Requirement

2.000 GPA required in the minor

Biology

Website (<http://www.northeastern.edu/biology>)

Jonathan Tilly, PhD

Chair and University Distinguished Professor

134 Mugar Life Sciences Building

617.373.2260

617.373.3724 (fax)

Advising website (<http://www.tinyurl.com/bioadv>)

The Department of Biology offers two majors, the BS in biology and the BS in cell and molecular biology. Both majors lay the groundwork for strong scientific training with basic course work in mathematics,

chemistry, and physics, relevant to biology. In the biology major, students explore the organization and processes of life, from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. The BS degree in cell and molecular biology offers a more focused program of study emphasizing processes operating at the cellular and molecular levels of biological systems. In both majors, students can select advanced electives to specialize in a subdiscipline of biology such as developmental biology, stem cell biology, microbiology, or physiology.

Our programs provide a wide range of relevant co-op opportunities in the renowned Boston-area biotechnology industry, hospitals, and research institutions, as well as across the country and at international sites.

There are a number of interdisciplinary opportunities involving biology: BS in biochemistry; BS in behavioral neuroscience; BS in computer science and biology; BS in biology and English; BS in biology and mathematics; BS in biology and political science; BS in biology/MS in biotechnology; BS/PhD in biology. Students interested in marine biology should investigate the degree programs offered by marine and environmental science. Double majors involving any two of these biology programs are not available due to curricular overlap.

Our degree programs are designed to prepare students to enter the job market directly or to go on to graduate, medical, veterinary, dental, law, or business school. Our graduates are qualified for a wide array of career paths in industrial and clinical research in any of the life sciences, in teaching at all levels, in state or federal government agencies, in medicine and other healthcare-related professions. Premedical, pre dental, and other preprofessional students are urged to consult with the prehealth advising program early in their careers at Northeastern.

Programs

Bachelor of Science (BS)

- Biology (p. 480)
- Cell and Molecular Biology (p. 484)
- Biology and English (p. 488)
- Biology and Mathematics (p. 490)
- Biology and Political Science (p. 492)
- Computer Science and Biology (p. 293)

Minors

- Biology (p. 497)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Biology, BS

The BS in biology curriculum lays the groundwork for strong scientific training with basic course work in mathematics, chemistry, and physics, relevant to biology. Students explore the organization and processes of life across broad areas of the field, from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. Students can select advanced electives to specialize in a subdiscipline of biology such as developmental biology, stem cell biology, microbiology, or physiology.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Biology Major Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000	Biology at Northeastern	1
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
Required Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
<i>Project Lab</i>		
BIOL 2309	Biology Project Lab	4
<i>Biochemistry</i>		
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5

Biology Capstone

Code	Title	Hours
BIOL 4701	Biology Capstone	4

Biology Major Electives

Code	Title	Hours
Organismal and Population Biology		
Complete one of the following:		4-5
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	
Intermediate and Advanced Biology		
Complete three additional 4- or 5-semester-hour courses from the following:		12-15
BIOL 2321 to BIOL 3999		
BIOL 4705	Neurobiology of Cognitive Decline	
BIOL 4707	Cell and Molecular Biology	

BIOL 5000 to BIOL 5999

EEMB 2290 to EEMB 5515

EEMB 5520 to EEMB 5534

EEMB 5548 to EEMB 5569

ENVR 5242 Ancient Marine Life

One of the three intermediate/advanced electives can be a research course:

BIOL 4991 Research

BIOL 4994 Internship

BIOL 4970 Junior/Senior Honors Project 1

BIOL 4971 Junior/Senior Honors Project 2

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1251	Calculus and Differential Equations for Biology 1	4
Statistics		
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
Chemistry		
<i>General Chemistry</i>		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
<i>Organic Chemistry</i>		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Physics		
<i>Physics 1</i>		
Complete one of the following lecture/lab pairs. PHYS 1145/ PHYS 1146 is recommended:		5
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
<i>Physics 2</i>		
Complete one of the following lecture/lab pairs. PHYS 1147/ PHYS 1148 is recommended:		5
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
Intermediate or Advanced Science		
Complete one course from the following:		
BIOL 2301 to BIOL 5999		

CHEM 2311 to CHEM 5999

EEMB 2290 to EEMB 5999

ENVR 2310 to ENVR 5999

MATH 2280 to MATH 5999

PHYS 2303 to PHYS 5999

PSYC 2290 to PSYC 5999

Biology Major Credit/GPA Requirement

Complete 81 semester hours in the major with a cumulative GPA of 2.000.

Due to overlap in course content, double majoring in biology and cell and molecular biology, biology and biochemistry, biology and behavioral neuroscience, or biology and marine biology is not permitted.

Program Requirement

136 total semester hours required

Plan of Study

Please note that these are sample plans of study. While the requirements are the same for all students, individual schedules may vary.

Four Years, Two Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	0
BIOL 1108	1	CHEM 2311	4	BIOL 2302	4		1
CHEM 1161	4	CHEM 2312	1	Elective	4		4
CHEM 1162	1	ENGW 1111	4				4
MATH 1251	4	Elective	4				4
Elective	4						4
BIOL 1000	1						1
		19		17		9	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	BIOL 2309	4	BIOL 3611	4	Co-op	4
ENVR 2501	1	PHYS 1145	4	BIOL 3612	4		1
CHEM 2313	4	PHYS 1146	1	Elective	4		4
CHEM 2314	1	Elective	4				4
Elective	4	Elective	4				4
Elective	4	EESC 2000	1				1
		18		18		9	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 1147	4	Intermediate/ Advanced Biology Elective	4	Co-op	4
ENGW 3307	4	PHYS 1148	1	(Intermediate, Advanced Biology Elective Lab)	1		1
		Organismal/ Population Bio Elective	4	Elective	4		4
		(Organismal/ Population Bio Elective Lab)	1				1
		18		18		9	

Intermediate/ 4

Advanced

Biology

Elective

(Intermediate, 1

Advanced

Biology

Elective Lab)

Elective 4

4

19

9

0

Year 4

Fall	Hours	Spring	Hours
Co-op		Intermediate/ Advanced Biology Elective	4
		(Intermediate, Advanced Biology Elective Lab)	1
		Intermediate/ Advanced Science Elective	4
		(Intermediate, Advanced Science Elective Lab)	1
		BIOL 4701	4
		Elective	4
		0	
		18	

Total Hours: 140

Four Years, Two Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AP Credit for Biology	5	BIOL 2301	4	BIOL 2309	4	Vacation	4
BIOL 2299	4	BIOL 2302	1	Elective	4		4
CHEM 1161	4	CHEM 2311	4				4
CHEM 1162	1	CHEM 2312	1				1
MATH 1251	4	ENGW 1111	4				4
Elective	4	Elective	4				4
BIOL 1000	1						1
		23		18		8	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	Co-op	4	Co-op	4	PHYS 1147	4
ENVR 2501	1			Elective	4	PHYS 1148	1
CHEM 2313	4					Elective	4
CHEM 2314	1						1
PHYS 1145	4						4
PHYS 1146	1						1
EESC 2000	1						1
		16		0		4	

9

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Intermediate/Advanced Biology Elective	4	Co-op		Co-op		Intermediate/Advanced Science Elective	4	
(Intermediate, Advanced Biology Elective Lab)	1					(Intermediate, Advanced Science Elective Lab)	1	
BIOL 3611	4					Elective	4	
BIOL 3612	1							
ENGW 3307	4							
Elective	4							
		18			0			0
								9

Year 4

Fall	Hours	Spring	Hours
Intermediate/Advanced Biology Elective	4	Intermediate/Advanced Biology Elective	4
(Intermediate, Advanced Biology Elective Lab)	1	(Intermediate, Advanced Biology Elective Lab)	1
Organismal/Population Bio Elective	4	BIOL 4701	4
(Organismal/Population Bio Elective Lab)	1	Elective	4
Elective	4	Elective	4
Elective	4		
		18	17

Total Hours: 140

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	0	
BIOL 1108	1	CHEM 2311	4	BIOL 2302	1			
CHEM 1161	4	CHEM 2312	1	Elective	4			
CHEM 1162	1	ENGW 1111	4					
MATH 1251	4	Elective	4					
Elective	4							
BIOL 1000	1							
		19			17			9
								0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	BIOL 2309	4	Intermediate/Advanced Biology Elective	4	Co-op	0
ENVR 2501	1	PHYS 1145	4	(Intermediate, Advanced Biology Elective Lab)	1		

CHEM 2313	4	PHYS 1146	1	Elective	4	
CHEM 2314	1	Elective	4			
Elective	4	Elective	4			
Elective	4	EESC 2000	1			
		18			18	
						9
						0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	BIOL 3611	4	Vacation		Co-op	0	
		BIOL 3612	1					
		PHYS 1147	4					
		PHYS 1148	1					
		ENGW 3307	4					
		Elective	4					
		0			18			0
								0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	Intermediate/Advanced Biology Elective	4	Vacation		Co-op	0	
		(Intermediate, Advanced Biology Elective Lab)	1					
		Organismal/Population Bio Elective						
		(Organismal/Population Bio Elective Lab)	1					
		Elective	4					
		Elective	4					
		0			14			0
								0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Intermediate/Advanced Biology Elective	4
		(Intermediate, Advanced Biology Elective Lab)	1
		BIOL 4701	4
		Intermediate/Advanced Science Elective	4
		(Intermediate/Advanced Science Elective Lab)	1
		Elective	4
		0	18

Total Hours: 140

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AP Credit for Biology	5	BIOL 2301	4	BIOL 2309	4	Vacation	
BIOL 2299	4	BIOL 2302	1	Elective	4		
CHEM 1161	4	CHEM 2311	4				
CHEM 1162	1	CHEM 2312	1				
MATH 1251	4	ENGW 1111	4				
Elective	4	Elective	4				
BIOL 1000	1						
		23	18		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	Co-op		Co-op		PHYS 1147	4
ENVR 2501	1					PHYS 1148	1
CHEM 2313	4					Elective	4
CHEM 2314	1						
PHYS 1145	4						
PHYS 1146	1						
EESC 2000	1						
		16	0		0		9

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 3611	4	Co-op		Co-op		Vacation	
BIOL 3612	1						
ENGW 3307	4						
Elective	4						
Elective	4						
		17	0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Intermediate/Advanced Biology Elective	4	Co-op		Co-op		Vacation	
(Intermediate, Advanced Biology Elective Lab)	1						
Organismal/Population Bio Elective	4						
(Organismal/Population Bio Elective Lab)	1						
Elective	4						
Elective	4						
		18	0		0		0

Year 5			
Fall	Hours	Spring	Hours
Intermediate/Advanced Biology Elective	4	Intermediate/Advanced Biology Elective	4
(Intermediate, Advanced Biology Elective Lab)	1	(Intermediate, Advanced Biology Elective Lab)	1
Intermediate/Advanced Science Elective	4	BIOL 4701	4
(Intermediate, Advanced Science Elective Lab)	1	Elective	4
Elective	4		
Elective	4		
		18	13

Total Hours: 140

Cell and Molecular Biology, BS

The BS in cell and molecular biology curriculum lays the groundwork for strong scientific training with basic course work in mathematics, chemistry, and physics, relevant to biology. Students pursue a focused program of study emphasizing processes operating at the cellular and molecular levels of biological systems, including specialty courses in molecular cell biology and advanced genomics. Students choose from a range of advanced electives that delve deeply into molecular aspects of biology.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cell and Molecular Biology Major Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000	Biology at Northeastern	1
Introduction to Experiential Learning		
EESC 2000	Professional Development for Co-op	1
Required Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Genetics</i>		

BIOL 2301 and BIOL 2302 <i>Project Lab</i>	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 2309 <i>Inquiries</i>	Biology Project Lab	4
BIOL 2299 <i>Biochemistry</i>	Inquiries in Biological Sciences	4
BIOL 3611 and BIOL 3612 <i>Molecular Biology</i>	Biochemistry and Lab for BIOL 3611	5
BIOL 4707	Cell and Molecular Biology	4
BIOL 5591	Advanced Genomics	4
Intermediate/Advanced Cell and Molecular Biology Electives		
Complete two of the following:		
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2329	Bioethics	
BIOL 3601	Neural Systems and Behavior	
BIOL 3603	Mammalian Systems Physiology	
BIOL 3605	Developmental Neurobiology	
BIOL 3609	Developmental Biology	
BIOL 5306	Biological Clocks	
BIOL 5307	Biological Electron Microscopy	
BIOL 5499	Plant Biotechnology	
BIOL 5541	Endocrinology	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Microbial Biotechnology	
BIOL 5569	Advanced Microbiology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	
BIOL 5585	Evolution	
BIOL 5587	Comparative Neurobiology	
BIOL 5593	Cell and Molecular Biology of Aging	
BIOL 5597	Immunotherapies of Cancer and Infectious Disease	
<i>Research</i>		
One of the two Intermediate/Advanced Electives can be a research course:		
BIOL 4991	Research	
BIOL 4994	Internship	
BIOL 4970	Junior/Senior Honors Project 1	
BIOL 4971	Junior/Senior Honors Project 2	

Biology Capstone

Code	Title	Hours
BIOL 4701	Biology Capstone	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1251	Calculus and Differential Equations for Biology 1	4

Statistics

ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
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Chemistry

<i>General Chemistry</i>		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5

Organic Chemistry

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Physics

<i>Physics 1</i>		
Complete one of the following lecture/lab pairs. PHYS 1145/ PHYS 1146 is recommended:		

PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	

Physics 2

Complete one of the following lecture/lab pairs. PHYS 1147/ PHYS 1148 is recommended:		
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PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	

Intermediate or Advanced Science

Complete one course from the following:

BIOL 2301 to BIOL 5999
CHEM 2311 to CHEM 5999
EEMB 2290 to EEMB 5999
ENVR 2310 to ENVR 5999
MATH 2280 to MATH 5999
PHYS 2303 to PHYS 5999
PSYC 2290 to PSYC 5999

Cell and Molecular Biology Major Credit/GPA Requirement

Complete 84 semester hours in the major with a cumulative GPA of 2.000.

Due to overlap in course content, double majoring in cell and molecular biology and biology, biochemistry, marine biology or behavioral neuroscience is not permitted.

Program Requirement

136 total semester hours required

Plan of Study

Please note that these are sample plans of study. While the requirements are the same for all students, individual schedules may vary.

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	
BIOL 1108	1	CHEM 2311	4	BIOL 2302	1		
CHEM 1161	4	CHEM 2312	1	Elective	4		
CHEM 1162	1	ENGW 1111	4				
MATH 1251	4	Elective	4				
Elective	4						
BIOL 1000	1						
		19		17		9	
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	BIOL 2309	4	BIOL 3611	4	Co-op	
ENVR 2501	1	PHYS 1145	4	BIOL 3612	1		
CHEM 2313	4	PHYS 1146	1	Elective	4		
CHEM 2314	1	Elective	4				
Intermediate/ advanced CMB elective	4	Elective	4				
(Intermediate, advanced CMB elective lab)	1	EESC 2000	1				
Elective	4						
		19		18		9	
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Intermediate/ advanced CMB elective	4	BIOL 4707	4	Co-op	
Elective	4	(Intermediate, advanced CMB elective lab)	1	Elective	4		
		PHYS 1147	4				
		PHYS 1148	1				
		ENGW 3307	4				
		Elective	4				
		4		18		8	
						0	

Year 4			
Fall	Hours	Spring	Hours
Co-op		BIOL 5591	4
		BIOL 4701	4
		Intermediate/ advanced science elective	4
		(Intermediate, advanced science elective lab)	1

Elective	4
0	17

Total Hours: 138

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AP credit for biology	5	BIOL 2301	4	BIOL 2309	4	Vacation	
BIOL 2299	4	BIOL 2302	1	Elective	4		
CHEM 1161	4	CHEM 2311	4				
CHEM 1162	1	CHEM 2312	1				
MATH 1251	4	ENGW 1111	4				
Elective	4	Elective	4				
BIOL 1000	1						
		23		18		8	
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	Co-op		Co-op		BIOL 3611	4
ENVR 2501	1			Elective	4	BIOL 3612	1
CHEM 2313	4					Elective	4
CHEM 2314	1						
PHYS 1145	4						
PHYS 1146	1						
EESC 2000	1						
		16		0		4	
						9	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 4707	4	Co-op		Co-op		Intermediate/ advanced science elective	4
PHYS 1147	4					(Intermediate, advanced science elective lab)	1
PHYS 1148	1					Elective	4
ENGW 3307	4						
Elective	4						
		17		0		0	
						9	

Year 4			
Fall	Hours	Spring	Hours
BIOL 5591	4	BIOL 4701	4
Intermediate/ advanced CMB elective	4	Intermediate/ advanced CMB elective	4
(Intermediate/ advanced science elective lab)	1	(Intermediate/ advanced CMB elective lab)	1
Elective	4	Elective	4
Elective	4	Elective	4
		17	
		17	

Total Hours: 138

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107	4	BIOL 2299	4	BIOL 2301	4	Vacation	
BIOL 1108	1	CHEM 2311	4	BIOL 2302	1		
CHEM 1161	4	CHEM 2312	1	Elective	4		
CHEM 1162	1	ENGW 1111	4				
MATH 1251	4	Elective	4				
Elective	4						
BIOL 1000	1						
		19	17		9		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	BIOL 2309	4	BIOL 3611	4	Co-op	
ENVR 2501	1	PHYS 1145	4	BIOL 3612	1		
CHEM 2313	4	PHYS 1146	1				
CHEM 2314	1	Elective	4				
Elective	4	Elective	4				
Elective	4	EESC 2000	1				
		18	18		5		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		BIOL 4707	4	Vacation		Co-op	
		PHYS 1147	4				
		PHYS 1148	1				
		ENGW 3307	4				
		Elective	4				
		0	17		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Intermediate/ advanced CMB elective	4	Vacation		Co-op	
		(Intermediate, advanced CMB elective lab)	1				
		Intermediate/ advanced science elective	4				
		Intermediate/ advanced science elective lab)	1				
		Elective	4				
		Elective	4				
		0	18		0		0

Year 5			
Fall	Hours	Spring	Hours
Co-op		BIOL 5591	4
		BIOL 4701	4
		Intermediate/ advanced CMB elective	4

(Intermediate, advanced CMB elective lab)	1
Elective	4
0	17

Total Hours: 138

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AP credit for biology	5	BIOL 2301	4	BIOL 2309	4	Vacation	
BIOL 2299	4	BIOL 2302	1	Elective	4		
CHEM 1161	4	CHEM 2311	4				
CHEM 1162	1	CHEM 2312	1				
MATH 1251	4	ENGW 1111	4				
Elective	4	Elective	4				
BIOL 1000	1						
		23	18		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500	4	Co-op		Co-op		BIOL 3611	4
ENVR 2501	1					BIOL 3612	1
CHEM 2313	4					Elective	4
CHEM 2314	1						
PHYS 1145	4						
PHYS 1146	1						
EESC 2000	1						
		16	0		0		9

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 4707	4	Co-op		Co-op		Vacation	
PHYS 1147	4						
PHYS 1148	1						
ENGW 3307	4						
Elective	4						
		17	0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 5591	4	Co-op		Co-op		Vacation	
Intermediate/ advanced CMB elective	4						
(Intermediate/ advanced CMB elective lab)	1						
Elective	4						
Elective	4						
		17	0		0		0

Year 5

Fall	Hours	Spring	Hours
BIOL 4701	4	Intermediate/ advanced science elective	4
Intermediate/ advanced CMB elective	4	(Intermediate, advanced science elective lab)	1
(Intermediate/ advanced CMB elective lab)	1	Elective	4
Elective	4	Elective	4
Elective	4		
	17		13

Total Hours: 138

Biology and English, BS

In the BS, combined biology and English degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In English courses, students study the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone literatures; analyze writing practices and related media; and practice a variety of approaches to the study of language, rhetoric, writing, and literature. The fields of biology and English are bridged with course work in different forms of science writing, as well as psychology and sociology courses exploring the acquisition of language and reading; the sociology of health and illness; and the environment, technology, and society.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000 or ENGL 1000	Biology at Northeastern English at Northeastern	1

Experiential Learning Introduction

EESC 2000	Professional Development for Co-op	1
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Required Biology

<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
<i>Project Lab</i>		
BIOL 2309	Biology Project Lab	4
<i>Biochemistry</i>		
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5

Biology Elective

Code	Title	Hours
Organismal and Population Biology		
Complete one of the following:		4-5
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Supporting Courses for Biology

Code	Title	Hours
Mathematics		
MATH 1251	Calculus and Differential Equations for Biology 1	4
Statistics		
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
Chemistry		
<i>General Chemistry</i>		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
<i>Organic Chemistry</i>		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Physics		
<i>Physics 1</i>		
Complete one of the following lecture/lab pairs. PHYS 1145/ PHYS 1146 is recommended:		5

PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	

Physics 2

Complete one of the following lecture/lab pairs. PHYS 1147/
PHYS 1148 is recommended: 5

PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	

Intermediate or Advanced Science

Complete one course from the following: 4

BIOL 2301 to BIOL 5999		
CHEM 2311 to CHEM 5999		
EEMB 2290 to EEMB 5999		
ENVR 2310 to ENVR 5999		
MATH 2280 to MATH 5999		
PHYS 2303 to PHYS 5999		
PSYC 2290 to PSYC 5999		

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from
the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
ENGL 1160 or ENGL 1410	Introduction to Rhetoric Introduction to Writing Studies	4

Diversity

Complete one of the following courses. This course may also
be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	

ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	

LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Courses

Code	Title	Hours
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Integrative English Course

Complete one of the following: 4

ENGL 2770	Writing to Heal
ENGL 3340	Technologies of Text
ENGL 3427	The Literature of Science

Integrative General Biological Sciences Course

Complete one of the following: 4

PSYC 3464	Psychology of Language
PSYC 4520	Language and the Brain
SOCL 3441	Sociology of Health and Illness
SOCL 3485	Environment, Technology, and Society

Capstone Requirement

Complete one of the following capstone options:

Code	Title	Hours
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Biology Capstone

BIOL 4701	Biology Capstone	4
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English Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

Biology and English Combined-Major GPA Requirement

Minimum 2.000 GPA required in all BIOL courses

Minimum 2.000 GPA required in all ENGL courses

Program Requirement

128 total semester hours required

Biology and Mathematics, BS

In the BS, combined biology and mathematics degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In mathematics courses, students pursue mathematical reasoning, differential equations, and linear algebra, as well as statistics and probability. The fields of biology and mathematics are integrated in a range of course offerings including bioinformatics, applied statistics, advanced genomics, and biological imaging.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000 or MATH 1000	Biology at Northeastern Mathematics at Northeastern	1
Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
<i>Project Lab</i>		
BIOL 2309	Biology Project Lab	4
Chemistry		
<i>General Chemistry</i>		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
<i>Organic Chemistry</i>		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Biochemistry		
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
Organismal and Population Biology Elective		
Complete one of the following:		4-5
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Mathematics Requirements

Code	Title	Hours
Calculus 1		
MATH 1341 or MATH 1251	Calculus 1 for Science and Engineering Calculus and Differential Equations for Biology 1	4

Calculus 2 and Calculus 3

MATH 1342 or MATH 1252	Calculus 2 for Science and Engineering Calculus and Differential Equations for Biology 2	4
MATH 2321	Calculus 3 for Science and Engineering	4

Physics

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
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Required Mathematics Courses

MATH 1365	Introduction to Mathematical Reasoning	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4

Mathematics Electives

Complete three of the following:		12
MATH 2331	Linear Algebra	
MATH 3001 to MATH 4899		

Additional Requirements

Code	Title	Hours
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1

Capstone

Complete one of the following:		4
BIOL 4701	Biology Capstone	
MATH 4020	Research Capstone	
MATH 4025	Applied Mathematics Capstone	
MATH 5131	Introduction to Mathematical Methods and Modeling	

Biology/Mathematics Integrative Courses

Complete two of the following:		8-10
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	
BIOL 3405	Neurobiology	
BIOL 5569	Advanced Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5591	Advanced Genomics	
MATH 4581	Statistics and Stochastic Processes	
MATH 7343	Applied Statistics	
BINF 6308	Bioinformatics Computational Methods 1	
BINF 6309	Bioinformatics Computational Methods 2	

Intermediate or Advanced Science

Complete one course from the following:		4
BIOL 2301 to BIOL 5999		
CHEM 2311 to CHEM 5999		
EEMB 2290 to EEMB 5999		
ENVR 2310 to ENVR 5999		
MATH 2280 to MATH 5999		
PHYS 2303 to PHYS 5999		

PSYC 2290 to PSYC 5999

Writing Requirement

ENGW 3307 Advanced Writing in the Sciences 4

Biology and Mathematics Combined-Major Credit/GPA Requirements

Complete 93 semester hours in the major with a cumulative GPA of 2.000.

Program Requirements

143 total semester hours required

Biology and Political Science, BS

In the BS, combined biology and political science degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In political science courses, students pursue core concepts of American government, comparative politics, international relations and political thought. Course work in quantitative techniques is also required. Students choose from a range of advanced subject electives. An appreciation of the intersection of biology and political science is provided through advanced courses in science, technology and public policy, and in environmental politics and policy.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000	Biology at Northeastern	1
or POLS 1000	Political Science at Northeastern	
Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5

Project Lab

BIOL 2309 Biology Project Lab 4

Biochemistry

BIOL 3611 and BIOL 3612 Biochemistry and Lab for BIOL 3611 5

Organismal and Population Biology Elective

Complete one of the following: 4-5

BIOL 2321 and BIOL 2322 Microbiology and Lab for BIOL 2321

BIOL 2327 Human Parasitology

BIOL 3401 Comparative Vertebrate Anatomy

EEMB 2302 and EEMB 2303 Ecology and Lab for EEMB 2302

EEMB 2400 Introduction to Evolution

EEMB 2616 and EEMB 2617 Invertebrate Zoology and Lab for EEMB 2616

EEMB 2700 and EEMB 2701 Marine Biology and Lab for EEMB 2700

Mathematics

MATH 1251 Calculus and Differential Equations for Biology 1 4

Chemistry*General Chemistry*

CHEM 1161 and CHEM 1162 and CHEM 1163 General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161 5

Organic Chemistry

CHEM 2311 and CHEM 2312 Organic Chemistry 1 and Lab for CHEM 2311 5

CHEM 2313 and CHEM 2314 Organic Chemistry 2 and Lab for CHEM 2313 5

Physics

PHYS 1145 and PHYS 1146 Physics for Life Sciences 1 and Lab for PHYS 1145 5

PHYS 1147 and PHYS 1148 Physics for Life Sciences 2 and Lab for PHYS 1147 5

Intermediate or Advanced Science

Complete one course from the following: 4

BIOL 2301 to BIOL 5999

CHEM 2311 to CHEM 5999

EEMB 2290 to EEMB 5999

ENVR 2310 to ENVR 5999

MATH 2280 to MATH 5999

PHYS 2303 to PHYS 5999

PSYC 2290 to PSYC 5999

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4

Statistics

Complete one of the following: 4-5

POLS 2400 Quantitative Techniques

ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
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Political Thought

Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Upper-Division Electives

Complete four of the following:		16
POLS 2340	Business and Government	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 2399	Research Methods in Political Science	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

Political Science Elective

Complete one additional course in political science numbered 2300 or above.		4
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Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p.).

- Law and legal studies
- Public policy
- Security studies

Integrative Requirement and Capstone

Note: Science, Technology, and Public Policy (POLS 2390) cannot be used both as an integrative course and as an elective above.

Code	Title	Hours
Integrative Requirement		
POLS 2390 or POLS 2395	Science, Technology, and Public Policy Environmental Politics and Policy	4
Capstone		
BIOL 4701 or POLS 4701	Biology Capstone Political Science Senior Capstone	4

Program Requirement

136 total semester hours required

Concentrations

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Computer Science and Biology, BS

The computer science and biology combined major reflects how research in biology, especially genetics, has become a computational science. The program provides a strong foundation in biology, chemistry, and mathematics, as well as software development and algorithms.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development ¹	

CS 1210	Professional Development for CCIS Co-op ²	
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Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation (integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

¹ Students entering through the biology department may take Biology at Northeastern (BIOL 1000).

² Students entering through the biology department may take Professional Development for Co-op (EESC 2000).

Biology Courses

Code	Title	Hours
Foundations of Biology		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
Inquiries		
BIOL 2299	Inquiries in Biological Sciences	4
Molecular Biology		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
Techniques in Biology		
BIOL 2309	Biology Project Lab	4
Chemistry		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5

CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
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Biology Capstone

BIOL 4701	Biology Capstone	4
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Intermediate and Advanced Biology Electives

Complete two biology courses (with corequisite labs if offered). Choose one of these two courses from the following list:

BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Choose the second elective from the following list: 4-5

BIOL 2311 to 4999, EEMB 2290 to 5515, EEMB 5520 to 5534, EEMB 5548 to 5569, EEMB 2400

Biology Integrative Course

Complete one of the following: 4-5

BIOL 5569	Advanced Microbiology	
BINF 6308	Bioinformatics Computational Methods 1	
BIOL 4707	Cell and Molecular Biology	
BIOL 5581	Biological Imaging	
BIOL 5587	Comparative Neurobiology	
BIOL 5591	Advanced Genomics	
EEMB 5548	Sociobiology	

Supporting Courses

Code	Title	Hours
Calculus		
Complete two calculus courses with a grade of C– or higher.		
MATH 1251	Calculus and Differential Equations for Biology 1	4
MATH 1252	Calculus and Differential Equations for Biology 2	4
Probability and Statistics		
Complete one of the following: 4-5		
MATH 3081	Probability and Statistics	
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
Computing and Social Issues		
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	

SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society
Intermediate or Advanced Science	
Complete one course from the following: 4	
BIOL 2301 to BIOL 5999	
CHEM 2311 to CHEM 5999	
EEMB 2290 to EEMB 5999	
ENVR 2310 to ENVR 5999	
MATH 2280 to MATH 5999	
PHYS 2303 to PHYS 5999	
PSYC 2290 to PSYC 5999	

Writing Requirements

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Complete five general electives.

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Exploring Creative Expression and Innovation
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

141 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	BIOL 2301	4	Vacation	
CS 1800 and CS 1802	5	BIOL 2299	4	BIOL 2302	1		
CS 2500 and CS 2501	5	ENGW 1111	4	Elective	4		
BIOL 1107 and BIOL 1108	5	Elective	4				

CHEM 1161	4			
CHEM 1162	1			
CHEM 1163	0			
	21	17	9	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Elective	4	Co-op	
CHEM 2311 and CHEM 2312	5	CHEM 2313 and CHEM 2314	5	BIOL 2309	4		
CS 3200	4	CS 3000	4				
MATH 1251	4	BIOL 3611	4				
		BIOL 3612	1				
		MATH 1252	4				
	17		19		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	ENGW 3302	4	Co-op	
		Computing and social issues	4	ENVR 2500 and ENVR 2501 (or MATH 3081)	5		
		BIOL elective	5				
		BIOL integrative elective	4				
		THTR 1170	1				
	0		18		9		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500 and CS 4501	4	Elective	4	Co-op	
		BIOL 4701	4	Elective	4		
		BIOL elective	4				
		Computer science elective	4				
	0		16		8		0

Total Hours: 142

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	BIOL 2299	4				
BIOL 1107 and BIOL 1108	5	ENGW 1111	4				
CS 1200	1	MATH 1251	4				
CHEM 1161	4						
CHEM 1162	1						

CHEM 1163	0					
	21	17	0	0		
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	CS 3000	4	Vacation	0	Co-op
CS 3200	4	BIOL 2301	4			
CHEM 2311 and CHEM 2312	5	BIOL 2302	1			
MATH 1252	4	CHEM 2313 and CHEM 2314	5			
		CS 1210	1			
		Elective	4			
	17	19	0	0		
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	CS 3800	4	ENGW 3302	4	Co-op
		THTR 1170	1	BIOL 3611	4	
		BIOL 2309	4	BIOL 3612	1	
		Elective	4			
		BIOL elective	4			
	0	17	9	0		
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	BIOL elective	5	Elective	4	Co-op
		Computer science elective	4	Elective	4	
		ENVR 2500 and ENVR 2501 (or MATH 3081)	5			
		Computing and social issues	4			
	0	18	8	0		
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	CS 4500 and CS 4501	4			
		BIOL integrative elective	4			
		BIOL 4701	4			
		Elective	4			
	0	16				

Total Hours: 142

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation
					0	

CS 2500 and CS 2501	5	BIOL 2299	4			
BIOL 1107 and BIOL 1108	5	ENGW 1111	4			
CS 1200	1	MATH 1251	4			
CHEM 1161	4					
CHEM 1162	1					
CHEM 1163	0					
	21	17	0	0		

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CHEM 2311 and CHEM 2312	5	Co-op	0	Co-op	0	Vacation
						0
CS 3500	4					
CS 1210	1					
MATH 1252	4					
BIOL 2301	4					
BIOL 2302	1					
	19	0	0	0		0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3000	4	Co-op	0	Co-op	0	Elective
						4
CHEM 2313 and CHEM 2314	5					ENGW 3302
						4
BIOL 2309	4					
BIOL 3611	4					
BIOL 3612	1					
	18	0	0	0		8

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3800	4	Co-op	0	Co-op	0	Elective
						4
BIOL elective	4					Elective
						4
Elective	4					
THTR 1170	1					
CS 3200	4					
	17	0	0	0		8

Year 5						
Fall	Hours	Spring	Hours			
BIOL elective	5	CS 4500 and CS 4501	4			
Computer science elective	4	BIOL 4701	4			
ENVR 2500 and ENVR 2501 (or MATH 3081)	5	BIOL integrative elective	4			

Computing and social issues	4 Elective	4
	18	16

Total Hours: 142

Biology, Minor

The Department of Biology offers a minor in biology, which involves taking five biology courses, two of which must have a corequisite lab, and one science course chosen from a range of science departments.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Restrictions

This minor is not available for students who major in biology, biochemistry, behavioral neuroscience, cell and molecular biology, marine biology, or any combined major that involves biology.

Required Biology Courses

Complete five biology courses for a total of at least 22 semester hours. Three of the five courses must be at the 2000 level or above. Two of the five courses must contain a lab corequisite.

Options:

Code	Title	Hours
BIOL 2000 to BIOL 3999		
BIOL 5000 to BIOL 5999		
EEMB 2290 to EEMB 5515		
EEMB 5520 to EEMB 5534		
EEMB 5548 to EEMB 5569		

Science Course

Code	Title	Hours
Complete one course from the BIOL, CHEM, EEMB, ENVR, or PHYS subject areas.		

GPA Requirement

2.000 GPA required in the minor

Chemistry and Chemical Biology

Website (<http://www.northeastern.edu/chemistry>)

Michael Pollastri, PhD
Professor and Chair

Kay Onan, PhD
Associate Professor and Associate Chair

102 Hurtig Hall
617.373.2822

The Department of Chemistry and Chemical Biology provides education in basic chemistry and modern chemistry-related disciplines. The department offers an American Chemical Society–certified program leading to a Bachelor of Science in Chemistry and also offers a Bachelor of Science in Biochemistry jointly with the Department of Biology. In

conjunction with the Department of Marine and Environmental Sciences, the department offers a combined Bachelor of Science in Environmental Geology and Chemistry. The overall objective of the Bachelor of Science in Chemistry major program is to provide the fundamental scientific background and laboratory training for students as they prepare for chemically related careers or advanced study in fields including the traditional chemical specialties, as well as biochemistry, materials science, forensic science, medicine, education, law, and other endeavors that draw upon an understanding of the chemical basis of the world around us.

Key general objectives are the development of qualitative and quantitative problem-solving skills and effective communication skills. Specific learning objectives for the chemistry major include developing conceptual understanding and problem-solving abilities in the fundamental chemical subfields of analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry; gaining a foundation of physics and mathematics and integrating these areas with chemical principles; performing quantitative measurements and analyzing the resulting data; synthesizing and characterizing compounds; learning proper laboratory practices, including safety; developing proficiency with modern instruments and computers for data acquisition and analysis; and making meaning of research results and learning the relevance of chemistry to biology, pharmacology, medicine, manufactured and natural materials, and the environment.

Most of our chemistry majors participate in the cooperative education program and thereby gain invaluable professional experience to augment their classroom and laboratory work. Not only does this experience add immensely to the overall education received, it also has the potential to provide contacts and references for later employment or graduate school admissions. Chemistry majors also undertake a research project for at least one semester under the supervision of a faculty member. A sufficient number of elective courses are available in the program to allow a student to take more advanced courses or additional research in the department or to add courses in an area of special interest, such as criminal justice courses in the case of an interest in forensic science. Qualified students may also participate in a BS/MS program.

Programs

Bachelor of Science (BS)

- Chemistry (p. 497)
- Environmental Geology and Chemistry (p. 499)

Minor

- Chemistry (p. 501)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Chemistry, BS

The Bachelor of Science in Chemistry is designed to give students both breadth and depth in chemistry fundamentals. During their course of study, students have an opportunity to develop qualitative and quantitative problem-solving skills as well as effective communication skills. The overall objective of the program is to provide scientific background and laboratory experience for students as they prepare for chemically related careers or advanced study in fields that include both the traditional chemical specialties and other endeavors that draw upon an understanding of the chemical basis of the world around us such as

biochemistry, materials science, forensic science, medicine, education, or law.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Chemistry Major Requirements

Code	Title	Hours
Introduction to College		
CHEM 1000	Chemistry/Chemical Biology at Northeastern	1
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
General Chemistry		
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
Intermediate-Level Chemistry 1		
<i>Organic Chemistry</i>		
CHEM 2315 and CHEM 2316	Organic Chemistry 1 for Chemistry Majors and Lab for CHEM 2315	6
CHEM 2317 and CHEM 2318	Organic Chemistry 2 for Chemistry Majors and Lab for CHEM 2317	6
<i>Bioanalytical Chemistry</i>		
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	5
<i>Physical Chemistry</i>		
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	5
Intermediate-Level Chemistry 2		
Complete one of the following:		5
CHEM 3403 and CHEM 3404	Quantum Chemistry and Spectroscopy and Lab for CHEM 3403	
CHEM 4456 and CHEM 4457	Organic Chemistry 3: Organic Chemistry of Drug Design and Development and Lab for CHEM 4456	
Advanced-Level Chemistry		
Complete one of the following:		5
CHEM 3501 and CHEM 3502	Inorganic Chemistry and Lab for CHEM 3501	
CHEM 3505 and CHEM 3506	Introduction to Bioinorganic Chemistry and Lab for CHEM 3505	

Complete the following courses:		
CHEM 3521 and CHEM 3522	Instrumental Methods of Analysis and Instrumental Methods of Analysis Lab	5
CHEM 3531 and CHEM 3532	Chemical Synthesis Characterization and Chemical Synthesis Characterization Lab	5
CHEM 4628 and CHEM 4629	Introduction to Spectroscopy of Organic Compounds and Identification of Organic Compounds	6

Biochemistry		
CHEM 4621 and CHEM 4622	Introduction to Chemical Biology and Lab for CHEM 4621	5

Senior Research/Capstone		
CHEM 4750	Senior Research	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
Physics		
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5

Chemistry Major Credit Requirement

Complete 86 semester hours in the major.

Program Requirement

135 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Please note that these are sample plans of study. While the requirements are the same for all students, individual schedules may vary.

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211	4	CHEM 1214	4	Open	0	Open	0
CHEM 1212	1	CHEM 1215	1				
CHEM 1213	0	CHEM 1216	0				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	PHYS 1151	3				
CHEM 1000	1	PHYS 1152	1				
Elective	4	PHYS 1153	1				
		Elective	4				
	18		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2315	4	CHEM 2317	4	CHEM 3521	1	Co-op	0

CHEM 2316	2	CHEM 2318	2	CHEM 3522	4
PHYS 1155	3	CHEM 2331	4	CHEM 3531	1
PHYS 1156	1	CHEM 2332	1	CHEM 3532	4
PHYS 1157	1	EESC 2000	1		
Elective	4	Elective	4		
Elective	4	Elective	4		
19		20		10	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 3431	4	Open		Co-op	0
		CHEM 3432	1				
		CHEM 4628	4				
		CHEM 4629	2				
		Elective	4				
		Elective	4				
0		19		0		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 3505	4	Open		Co-op	0
		CHEM 3506	1				
		ENGW 3307	4				
		Elective	4				
		Elective	4				
0		17		0		0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CHEM 3403	4
		CHEM 3404	1
		CHEM 4621	4
		CHEM 4622	1
		CHEM 4750	4
0		14	

Total Hours: 135

Four Years, Two Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211	4	CHEM 1214	4	Elective	4	Open	
CHEM 1212	1	CHEM 1215	1	Elective	4		
CHEM 1213	0	CHEM 1216	0				
MATH 1341	4	MATH 1342	4				
CHEM 1000	1	PHYS 1151	3				
ENGW 1111	4	PHYS 1152	1				
Elective	4	PHYS 1153	1				
		Elective	4				
18		18		8		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2315	4	CHEM 2317	4	Open		Co-op	
CHEM 2316	2	CHEM 2318	2				
PHYS 1155	3	CHEM 2331	4				
PHYS 1156	1	CHEM 2332	1				

PHYS 1157	1	EESC 2000	1
Elective	4	Elective	4
Elective	4	Elective	4
19		20	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CHEM 3431	4	CHEM 3521	1	ENGW 3307	4
		CHEM 3432	1	CHEM 3522	4	Co-op	
		CHEM 4456	4	CHEM 3531	1		
		CHEM 4457	1	CHEM 3532	4		
		CHEM 4628	4				
		CHEM 4629	2				
		Elective	4				
0		20		10		4	

Year 4

Fall	Hours	Spring	Hours
Co-op		CHEM 3505	4
		CHEM 3506	1
		CHEM 4621	4
		CHEM 4622	1
		CHEM 4750	4
		Elective	4
0		18	

Total Hours: 135

Environmental Geology and Chemistry, BS**Jonathan Grabowski, PhD**

Associate Professor
Marine Science Center, Nahant
781.581.370 x337

Michael P. Pollastri, PhD

Professor and Chair
102 Hurtig Hall
617.373.2822

Danielle Lynch, Undergraduate Administrative Officer,
dw.lynch@neu.edu, 617.373.3176

The Departments of Marine and Environmental Sciences and Chemistry provide education in basic environmental science and chemistry-related disciplines. The overall objective of this combined major is to provide the fundamental scientific background and practical training for students as they prepare for environmental and chemically related careers or advanced study in fields including the traditional specialties such as toxicology, pollution, bio-remediation, environmental protection, education, law, and other endeavors that may draw upon an understanding of the chemical basis of the environment and the changes that will likely result from global warming.

Key general objectives are the development of qualitative and quantitative problem-solving skills and effective communication skills. Specific learning objectives for this combined major include the development of conceptual understanding and problem-solving abilities in the fundamental dynamics between the environment and its chemistry, be it analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. Students will perform quantitative

measurements; learn proper laboratory practices, including safety; develop proficiency with modern instruments and computers for data acquisition and analysis; and learn the relevance of chemistry within the context of the abiotic and biotic environments.

Most of our combined majors will participate in the cooperative education program and thereby gain invaluable professional experience to augment their classroom and laboratory work. Not only does that experience add immensely to the overall education received, it also has the potential to provide contacts and references for later employment or graduate school admissions. Students in this major may also undertake research projects for at least one semester under the supervision of a faculty member. Sufficient electives are available in the program either to take more advanced courses or research within the department or to add courses in an area of special interest.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Environmental Geology Major Requirements

Code	Title	Hours
Earth Foundations		
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	5
Geomorphology		
ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	5
Environmental Geology Intermediate/Advanced Electives		
Complete two intermediate or advanced electives from ENVR 2300 to ENVR 5999.		8-10

Supporting Courses for Environmental Geology

Code	Title	Hours
Mathematics		
MATH 1241	Calculus 1	4
MATH 1242	Calculus 2	4
Science Requirement		
Complete one of the following options:		10
<i>Biology Option</i>		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	
<i>Physics Option</i>		

Physics Option

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165

Chemistry Major Requirements

Code	Title	Hours
General Chemistry		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
Intermediate-Level Chemistry		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	5
CHEM 3403 and CHEM 3404	Quantum Chemistry and Spectroscopy and Lab for CHEM 3403	5
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	5
Advanced-Level Chemistry		
CHEM 3521 and CHEM 3522	Instrumental Methods of Analysis and Instrumental Methods of Analysis Lab	5

Environmental Geology/Chemistry Integrative Requirement

Code	Title	Hours
Choose two courses from the following:		
ENVR 3410	Environmental Geochemistry	
ENVR 5190	Soil Science	

Environmental Geology/Chemistry Major Credit Requirement

Complete 94 semester hours in the major.

Program Requirement

128 total semester hours required.

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Vacation	0
ENGW 1111	4	ENVR 1202 and ENVR 1203	5				
ENVR 1200 and ENVR 1201	5	MATH 1242	4				
MATH 1241	4	Elective	4				
	18		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	CHEM 2313 and CHEM 2314	5	Vacation	0	Co-op	0
ENVR 2310 and ENVR 2311	5	EESC 2000	1				
Physics 1 or Biology 1	5	GEOL intermediate/advanced undergraduate elective	4				
		Physics 2 or Biology 2	5				
	15		15		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 2331 and CHEM 2332	5	Elective	4	Co-op	0
		ENVR 2340 and ENVR 2341	5	Elective	4		
		Elective	4				
		Integrative course	5				
	0		19		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 3431	4	CHEM 3521 and CHEM 3522	5	Co-op	0
		CHEM 3432	1	Elective	4		
		Elective	4				
		GEOL intermediate/advanced undergraduate elective	4				
		Integrative course	4				
	0		17		9		0

Year 5

Fall	Hours	Spring	Hours
Co-op		ENGW 3303, 3307, or 3315	4
		CHEM 3403	4
		CHEM 3404	1
		Elective	4
		Elective	4
	0		17

Total Hours: 136

Chemistry, Minor

The minor in chemistry is designed for the student who would like a sound foundation in the theory and laboratory practice of chemistry.

It requires six courses in chemistry with their prerequisites and corequisites.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Note: Engineering students may take General Chemistry for Engineers (CHEM 1151) in place of General Chemistry 1 (CHEM 1211) and two other chemistry courses in place of General Chemistry 2 (CHEM 1214) and Physical Chemistry (CHEM 3431).

Code	Title	Hours
General Chemistry		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
Organic Chemistry		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
Physical Chemistry		
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	5
Advanced Lab		
Complete one of the following:		5
CHEM 3403 and CHEM 3404	Quantum Chemistry and Spectroscopy and Lab for CHEM 3403	
CHEM 4456 and CHEM 4457	Organic Chemistry 3: Organic Chemistry of Drug Design and Development and Lab for CHEM 4456	

GPA Requirement

2.000 GPA required in the minor

Linguistics

Website (<http://www.northeastern.edu/linguistics>)

Neal J. Pearlmutter, PhD

Associate Professor, Psychology, and Program Director

545 Nightingale Hall

617.373.4553

linguistics@northeastern.edu

Neal J. Pearlmutter, Associate Professor and Program Director,

n.pearlmutter@northeastern.edu

Heather Littlefield, Associate Teaching Professor and Assistant Director,

h.littlefield@northeastern.edu

Linguistics is the scientific study of human language. A growing and exciting field, it has links to a diverse range of others, including psychology, philosophy, neuroscience, computer science, artificial

intelligence, sociology, language teaching, anthropology, and education. Linguistics is a key component of the field of cognitive science, the study of the structure and functioning of human cognitive processes.

How do children learn to speak? How is language represented in the mind? What do all languages, including sign languages, have in common? How is language different from the communication systems used by whales, bees, and chimpanzees? What linguistic information do computers need in order for us to converse with them? What are the neurological tie-ins of language disorders such as aphasia or Williams Syndrome, and what can such impairments tell us about the brain mechanisms for language? These scientific and technological questions lead us to ask other questions about language and society: How might we think about linguistic controversies, including debates about official languages, Black English, gender bias, and bilingualism in education? Linguistics attempts to answer each of these questions and covers a surprisingly broad range of topics related to language and communication. Cutting-edge work in cognitive science investigates how natural languages are learned and processed. Grammar checkers and translation programs use language parsers; search engines, browsers, and editors apply the results of linguistic theory and computational linguistics. Linguistics is behind every application that recognizes or synthesizes speech. To work in a field that involves language in any way, you will need to know how language works, the core of the field of linguistics.

Linguistics at Northeastern offers courses in the theory and structure of language (such as phonetics, phonology, morphology, syntax, and semantics); the sociocultural nature of language (such as language and culture, language and gender, and sociolinguistics); the psychology of language (offered by the Department of Psychology); and applications to related domains (such as language acquisition, language change, and historical linguistics) that cross into the humanities and social sciences.

Students can pursue a major in linguistics as well as in one of the combined majors: linguistics and psychology, linguistics and cultural anthropology, linguistics and English, linguistics and communication studies, computer science and linguistics, and American Sign Language (ASL) and linguistics. A minor in linguistics is also available.

Linguistics offers a variety of co-ops, including positions at local and national companies involved in speech recognition and production, as well as at Northeastern's own speech perception and language processing labs in the Department of Psychology. Linguistics majors can also participate in international co-ops—for example, working with researchers at the University of Kaiserslautern in Germany.

Students with backgrounds in linguistics have pursued advanced degrees in fields including law, cognitive science, education, English, interpreting, business, speech pathology, computer science, developmental psychology, sociology, and linguistics itself. Other graduates have gone on to work in neurological research, computational linguistics, translation, language software, education, dictionary publishing, robotics, and criminal justice.

Programs

Bachelor of Science (BS)

- Linguistics (p. 502)
- American Sign Language and Linguistics (p. 504)
- Computer Science and Linguistics (p. 327)
- Linguistics and Cultural Anthropology (p. 507)
- Linguistics and Psychology (p. 509)

Bachelor of Arts (BA)

- Linguistics and Communication Studies (p. 131)
- Linguistics and English (p. 512)

Minor

- Linguistics (p. 515)

Linguistics, BS

The major in linguistics provides students with a strong foundation in the study of linguistics at both the structural and social levels. Course work on the structural side focuses on the internal structures that make up language and the methods and theories used to identify and understand these core structures (for example, in courses covering phonetics, phonology, morphology, syntax, and semantics), while course work on the social side emphasizes the methods and theories that are used to study and interpret patterns of social interaction at the linguistic level (for example, in courses covering language and culture, sociolinguistics, and language and gender). Additional course work draws from related fields to further develop students' understanding of the broad spectrum of language-related domains (for example, the psychology of language, language acquisition, and historical linguistics, among other topics).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Linguistics Major Language Requirement

Complete two courses in the same language with a grade of C or higher. Proficiency at elementary level 2 or higher is required.

Linguistics Major Requirements

Code	Title	Hours
Required Courses		
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3424	Morphology	4
or LING 3452	Semantics	
LING 3450	Syntax	4
PSYC 3464	Psychology of Language	4
Laboratory		
<i>Prerequisites</i>		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
<i>Laboratory</i>		

Complete one of the following: 4

- PSYC 4610 Laboratory in Psycholinguistics
- PSYC 4612 Laboratory in Cognition

Note: With prior approval, any of the following courses may be used to fulfill the laboratory requirement. Consult your advisor to discuss this option:

- LING 4891 Research Seminar in Linguistics
- LING 4991 Directed Study Research
- PSYC 4991 Directed Study Research

Linguistics Seminar

- LING 4654 Seminar in Linguistics 4
- or PSYC 4658 Seminar in Psycholinguistics

Experiential Learning

Complete one of the following options, or complete a study abroad (not a Dialogue of Civilizations): 4

Directed Study

- LING 4991 Directed Study Research

Junior/Senior Honors Project

- LING 4970 Junior/Senior Honors Project 1 and LING 4971 and Junior/Senior Honors Project 2

Linguistics Electives

Complete four of the following: 16

- DEAF 2700 ASL Linguistics
- LING 3420 Phonetics
- LING 3424 Morphology
- LING 3434 Bilingualism
- LING 3442 Sociolinguistics
- LING 3452 Semantics
- LING 3454 History of English
- LING 3456 Language and Gender
- LING 3458 Topics in Linguistics
- LING 4654 Seminar in Linguistics
- LING 4891 Research Seminar in Linguistics
- or LING 4970 Junior/Senior Honors Project 1
- or LING 4971 Junior/Senior Honors Project 2
- or LING 4991 Directed Study Research
- or PSYC 4991 Directed Study Research
- PSYC 3466 Cognition
- PSYC 4520 Language and the Brain
- PSYC 4524 Cognitive Development
- PSYC 4610 Laboratory in Psycholinguistics
- PSYC 4612 Laboratory in Cognition
- PSYC 4658 Seminar in Psycholinguistics
- PSYC 4660 Seminar in Cognition
- PSYC 4674 Seminar in Cognitive Neuroscience

Linguistics Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3464	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Foreign language course	4				
LING 1000	1						
		17		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3412	4	LING 3422	4	Vacation	0	Co-op	0
PSYC 2320	4	Linguistics elective	4				
Linguistics elective	4	Elective	4				
Foreign language course	4	Elective	4				
		EESC 2000		1			
		16		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3450	4	Elective	4	Co-op	0
		Linguistics elective		4		4	
		ENGW 3315		4			
		Elective		4			
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3424 or 3452	4	Elective	4	Co-op	0
		Laboratory course		4		4	
		Elective		4			
		Elective		4			
		0		16		8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Linguistics seminar	4
		Linguistics elective	
		4	
		Elective	
		4	
		Elective	
		4	
		0	
		16	

Total Hours: 130

American Sign Language and Linguistics, BS

The American Sign Language (ASL) & Linguistics combined major is an intensive program of study dedicated to preparing students to interact in a positive and supportive manner with members of the American Deaf Community while simultaneously providing students with an understanding of the theoretical, cultural, and social components of all human language, including ASL, so that they can better understand how ASL is related to spoken languages and other signed languages. This curriculum is designed to assist students in acquiring competence in American Sign Language; and in developing an understanding of the American Deaf Community and its culture, the acquisition and analysis of human languages (signed and spoken), and how human languages work in everyday use (e.g., comprehension, generation, translation).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
Language Requirement		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Interpreting		
INTP 3500	The Interpreting Profession	2
INTP 3510	Interpreting Inquiry Texts	4

Linguistics Requirements

Code	Title	Hours
Core Linguistics Requirements		
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3422	Phonology	4
LING 3424	Morphology	4
or LING 3452	Semantics	

LING 3450	Syntax	4
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Psychology of Language

PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4

Electives

Complete two courses from the following:		8
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
LING 4970	Junior/Senior Honors Project 1	
LING 4971	Junior/Senior Honors Project 2	
LING 4991	Directed Study Research	
PSYC 4520	Language and the Brain	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4991	Directed Study Research	

Seminar Requirement

Complete one course (not counted elsewhere) from the following:		4
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
PSYC 4658	Seminar in Psycholinguistics	

Integrative Courses

Code	Title	Hours
DEAF 2700	ASL Linguistics	4
INTP 4940	Interpreting Research Practicum	4
LING 3412	Language and Culture	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 92 semester hours in the major.

Program Requirements

128 total semester hours required

Plan of Study

Sample, Four Years

Year 1			
Fall	Hours	Spring	Hours
AMSL 1101	4	AMSL 1102	4
DEAF 1500	4	LING 2350	4
LING 1150	4	LING 3412	4
NUpath/Elective	4	NUpath/Elective	4
16		16	

Year 2			
Fall	Hours	Spring	Hours
AMSL 2101	4	AMSL 2102	4
DEAF 2500	4	DEAF 2700	4
PSYC 1101	4	PSYC 2320	4
NUpath/Elective	4	NUpath/Elective	4
		16	16

Year 3			
Fall	Hours	Spring	Hours
AMSL 3101	4	LING 3450	4
INTP 3500	2	LING 3424 or 3452	4
INTP 3510	4	PSYC 3464	4
LING 3422	4	NUpath/Elective	4
NUpath/Elective	4		
		18	16

Year 4			
Fall	Hours	Spring	Hours
INTP 4940	4	Linguistics Seminar	4
Linguistics Elective	4	Linguistics Elective	4
NUpath/Elective	4	NUpath/Elective	4
NUpath/Elective	4	NUpath/Elective	4
		16	16

Total Hours: 130

Computer Science and Linguistics, BS

The computer science and linguistics combined major provides students with extensive background in the formal structures of natural (human) languages, as well as methods and applications of linguistic and psycholinguistic analyses of human language data. This is combined with an emphasis in computer science on artificial intelligence and natural language processing techniques. The major provides excellent preparation for work or more advanced degrees focusing on computational linguistics, natural language processing, speech perception, spoken language interfaces, artificial intelligence, and a wide array of related fields.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1

CS 1210	Professional Development for CCIS Co-op	1
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Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation (Integrative course)	4
CS 4100	Artificial Intelligence (Integrative course)	4
CS 4120	Natural Language Processing (Integrative course)	4
CS 4400	Programming Languages (Integrative course)	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 4 credits of CS, IS, or DS courses that are not already required. Choose courses within the following range:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Linguistics Requirements

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis (Integrative course)	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax (Integrative course)	4
Intermediate/Advanced Linguistics Elective		
LING 3424 or LING 3452	Morphology or Semantics	4
Psychology Requirements		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
Laboratory/Directed Study		
Complete one of the following:		4
LING 4891	Research Seminar in Linguistics	

LING 4991	Directed Study Research	
PSYC 4610	Laboratory in Psycholinguistics	
Seminar Requirement		
LING 4654	Seminar in Linguistics	4
or PSYC 4658	Seminar in Psycholinguistics	
Linguistics Elective		
Complete one of the following:		4
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
PSYC 3466	Cognition	
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4674	Seminar in Cognitive Neuroscience	
With prior approval, directed study research, independent study, and Honors Project courses can also be counted:		
LING 4891	Research Seminar in Linguistics	
LING 4970	Junior/Senior Honors Project 1	
LING 4971	Junior/Senior Honors Project 2	
LING 4991	Directed Study Research	
PSYC 4991	Directed Study Research	

Supporting Courses

Code	Title	Hours
Mathematics Requirement		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following:		4
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		

ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Complete five general electives.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Interpreting Culture
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Engaging Difference and Diversity
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, One Co-op in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	LING 2350	4				
CS 2500 and CS 2501	5	Elective	4				
LING 1150	4	PSYC 1101	4				
ENGW 1111	4						
		19		17		0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Elective	4	Co-op	
MATH 1341	4	CS 3000	4	Elective	4		
LING 3412	4	CS 3800	4				
PSYC 3464	4	LING 3422	4				
		PSYC 2320	4				
		16		17		8	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4120	4	Elective	4	Vacation	
		CS 4400	4	Elective	4		
		LING 3450	4				

ENGW 3302	4			
THTR 1170	1			
	0	17	8	0

Year 4

Fall	Hours	Spring	Hours
CS 4500	4	CS 4100	4
LING seminar	4	CS elective	4
Computing and social issues	4	LING elective	4
LING 3424 or 3452	4	LING lab (or directed study)	4
	16		16

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	LING 2350	4				
CS 1800 and CS 1802	5	PSYC 1101	4				
LING 1150	4	Elective	4				
ENGW 1111	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 1210	1	Vacation	0	Co-op	0
MATH 1341	4	CS 3000	4				
LING 3412	4	CS 3800	4				
PSYC 3464	4	LING 3422	4				
		PSYC 2320	4				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4120	4	Elective	4	Co-op	0
		CS 4400	4	Elective	4		
		LING 3450	4				
		ENGW 3302	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4100	4	Elective	4	Co-op	0
		CS elective	4	Elective	4		
		LING lab (or directed study)	4				

LING 3424 or 3452	4			
	0	16	8	0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	CS 4500	4
		LING seminar	4
		Computing and social issues	4
		LING elective	4
	0		16

Total Hours: 134

Linguistics and Cultural Anthropology, BS

The combined major in linguistics and cultural anthropology focuses on the relationship of culture to the institutions, interpersonal relations, and practices that make up their social structure while emphasizing the structure of human language and its involvement in social interaction and culture. Students examine how language both reflects and influences cultural phenomena and how it can be used as a tool to study those phenomena; and they apply their interests across a range of connected courses, co-op opportunities, and potential research projects.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Linguistics Major Language Requirement

Complete two courses in the same language with a grade of C or higher. Proficiency at elementary level 2 or higher is required.

Linguistics Requirements

Note: A grade of C or higher is required for all courses in this section.

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis	4
LING 3422	Phonology	4

LING 3442	Sociolinguistics	4
LING 3450	Syntax	4
LING 3456	Language and Gender	4

Linguistics Electives

Complete two of the following: 8

DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3452	Semantics	
LING 3454	History of English	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
PSYC 3464	Psychology of Language	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	

Linguistics Research

Complete one of the following: 4

LING 4891	Research Seminar in Linguistics	
LING 4991	Directed Study Research	
LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2	

Anthropology Requirements

Code	Title	Hours
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Foundation Courses

ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 4600	Senior Seminar	4

Anthropology Advanced Area Courses

Complete three of the following: 12

ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete three ANTH courses not already taken. 12

Linguistics/Anthropology Integrative Requirement

Code	Title	Hours
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Integrative Course

LING 3412	Language and Culture	4
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Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Linguistics/Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation		Vacation	
ANTH 1101	4	ANTH 2305	4				
ENGW 1111	4	LING 3412	4				
MATH 1215	4	Foreign language course	4				
		16		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3422	4	LING 3442	4	Vacation		Co-op	
Foreign language course	4	LING 3450	4				
Anthropology elective	4	Anthropology elective	4				
Elective	4	Elective	4				
		16		16		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		LING 3456	4	Elective	4	Co-op	
		Linguistics elective	4	Elective	4		
		Anthropology elective	4				
		Elective	4				
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Linguistics elective	4	Elective	4	Co-op	
		Anthropology advanced area course	4	Elective	4		
		Anthropology advanced area course	4				
		ENGW 3315	4				
		0		16		8	

Year 5

Fall	Hours	Spring	Hours
Co-op		ANTH 4600	4
		Anthropology advanced area course	4
		Linguistics research	4
		Elective	4
		0	
		16	

Total Hours: 128

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation		Vacation	
ANTH 1101	4	ANTH 2305	4				
ENGW 1111	4	LING 3412	4				
MATH 1215	4	Foreign language course	4				
		16	16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3422	4	LING 3442	4	Vacation		Vacation	
Foreign language course	4	LING 3450	4				
Anthropology elective	4	Anthropology elective	4				
Elective	4	Elective	4				
		16	16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Anthropology elective	4	LING 3456	4	Vacation		Vacation	
Anthropology advanced area course	4	Linguistics elective	4				
Elective	4	Anthropology advanced area course	4				
ENGW 3315	4	Elective	4				
		16	16		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Linguistics research	4	ANTH 4600	4				
Anthropology advanced area course	4	Linguistics elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16	16				

Total Hours: 128

Linguistics and Psychology, BS

This combined major educates students in psychology, linguistics, and the interface between the two disciplines, which are core areas within the field of cognitive science. Students study the formal structures of human language; sociocultural aspects of language use; and the cognitive aspects of language representations, language acquisition, and language processing. Students receive interdisciplinary training in the methods of experimental psychology, psycholinguistics, and linguistic analysis.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Linguistics Language Requirement

Complete two courses in the same language with a grade of C or higher. Proficiency at elementary level 2 or higher is required.

Linguistics Requirements

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4
Linguistics Electives		
Complete three of the following:		12
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
or LING 4970	Junior/Senior Honors Project 1	
or LING 4971	Junior/Senior Honors Project 2	
or LING 4991	Directed Study Research	

Psychology Requirements

Code	Title	Hours
Introductory and Intermediate Psychology		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
Advanced Psychology		
PSYC 3402	Social Psychology	4
PSYC 3466	Cognition	4
Psychology Lab		
Complete one of the laboratory courses or, with prior approval, a directed study or honors project on a topic related to psycholinguistics or cognition:		4
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	

PSYC 4970	Junior/Senior Honors Project 1
PSYC 4971	Junior/Senior Honors Project 2
PSYC 4991	Directed Study Research

Psychology Seminar

Complete one of the following: 4

PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience

Psychology Electives

A directed study on a topic related to psycholinguistics or cognition may be taken with prior approval.

Complete two of the following: 8

PSYC 3404	Developmental Psychology
PSYC 3450	Learning and Motivation
PSYC 3452	Sensation and Perception
PSYC 3458	Biological Psychology
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4628	Laboratory in Developmental Psychology
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience
PSYC 4676	Seminar in Developmental Psychology
PSYC 4991	Directed Study Research

Integrative Requirement

Code	Title	Hours
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PSYC 3464	Psychology of Language	4
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Complete a directed study, two junior/senior honors project courses, or a study abroad (not a Dialogue): 4-8

LING 4991	Directed Study Research
LING 4996	
LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2
PSYC 4970 and PSYC 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2
PSYC 4991	Directed Study Research

Linguistics and Psychology Combined-Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3464	4				

ENGW 1111	4 Foreign language course	4			
MATH 1215	4 Elective	4			
		16	16	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3412	4	LING 3422	4	Vacation	0	Co-op	0
PSYC 2320	4	Linguistics elective	4				
PSYC 3466	4	PSYC 3402	4				
Foreign language course	4	Psychology elective	4				
		EESC 2000	1				
			16		17		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3450	4	Elective	4	Co-op	0
		Linguistics or psychology elective	4	Elective	4		
		Psychology laboratory	4				
		ENGW 3315	4				
			0		16		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Linguistics elective	4	Elective	4	Co-op	0
		Linguistics or psychology elective	4	Elective	4		
		Psychology seminar	4				
		Elective	4				
			0		16		8

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Elective	4
		Elective	4
		Elective	4
		Elective	4
			0
			16

Total Hours: 129

Sample Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3464	4				
ENGW 1111	4	Foreign language course	4				

MATH 1215	4	Elective	4				
	16		16	0	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3412	4	LING 3422	4	Vacation	0	Vacation	0
PSYC 2320	4	PSYC 3402	4				
PSYC 3466	4	Linguistics elective	4				
Foreign language course	4	Psychology elective	4				
	16		16	0	0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Linguistics elective	4	LING 3450	4	Vacation		Vacation	
Psychology lab	4	Linguistics or psychology elective	4				
ENGW 3315	4	Elective	4				
Elective	4	Elective	4				
	16		16	0	0		
Year 4							
Fall	Hours	Spring	Hours				
Linguistics or psychology elective	4	Elective	4				
Psychology seminar	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				

Total Hours: 128

Linguistics and Communication Studies, BA

In the combined major in linguistics and communication studies, students have an opportunity to learn about the formal structures and analysis of human languages across multiple levels (sounds, words, phrases and sentences, meaning) while simultaneously mastering the fundamentals of effective communication and of communication theory and practice. Students receive extensive training in writing and speaking, both for a technical audience and more generally; and they explore the role of language and communication in society, both from a broad theoretical perspective and in narrower, more focused and applied domains.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Linguistics Requirements

Code	Title	Hours
Required Linguistics Courses		
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4
LING 3424	Morphology	4
	or LING 3452	Semantics
Linguistics Electives		
	Complete two of the following, not used to fulfill the linguistics required courses above:	8
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
	or LING 4970	Junior/Senior Honors Project 1
	or LING 4971	Junior/Senior Honors Project 2
	or LING 4991	Directed Study Research
PSYC 3464	Psychology of Language	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	

Communication Studies Requirements

Code	Title	Hours
Communication Studies Required Courses		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 2301	Communication Research Methods	4
Foundation Course		
	Complete one course from the following:	4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	

COMM 1255	Communication in a Digital Age
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Cluster Course

Complete one course from the following: 4

COMM 1131	Sex, Relationships, and Communication
COMM 2303	Global and Intercultural Communication
COMM 2304	Communication and Gender
COMM 2501	Communication Law
COMM 2551	Free Speech in Cyberspace

Writing-Intensive Course

Complete one course from the following: 4

COMM 3200	Mobile Communication
COMM 3201	Health Communication
COMM 3230	Interpersonal Communication
COMM 3304	Communication and Inclusion
COMM 3320	Political Communication
COMM 3330	Argumentation Theory
COMM 3400	Rhetoric of Science
COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete two additional COMM courses. 8

Integrative Requirement

Code	Title	Hours
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Sociolinguistics

LING 3442	Sociolinguistics	4
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Communication Studies Integrative Course

Complete one of the following, not used to fulfill above requirements: 4

COMM 3415	Communication Criticism
COMM 4602	Contemporary Rhetorical Theory

Capstone Experience

Complete one of the following, not used to fulfill above requirements: 4

LING 4654	Seminar in Linguistics
COMM 4102	Health Communication Campaigns
COMM 4602	Contemporary Rhetorical Theory
COMM 4608	Strategic Communication Capstone
COMM 4625	Online Communities

Linguistics and Communication Studies Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Linguistics and English, BA

In the combined major in linguistics and English, students learn about the structures and analysis of human languages across multiple levels (sounds, words, phrases and sentences, meaning) and apply this knowledge to understanding how the English language works, its rhetorical forms, how it has changed over time, and its cultural context. Students hone their writing skills, develop substantial language-analysis skills, and apply them particularly to English.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Linguistics Requirements

Code	Title	Hours
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Introductory Linguistics

LING 1150	Introduction to Language and Linguistics	4
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Intermediate/Advanced Linguistics

LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4

Linguistics Electives

Complete three of the following: 12

DEAF 2700	ASL Linguistics
LING 3420	Phonetics
LING 3424	Morphology
LING 3434	Bilingualism
LING 3442	Sociolinguistics
LING 3452	Semantics
LING 3456	Language and Gender
LING 3458	Topics in Linguistics
LING 4654	Seminar in Linguistics
PSYC 3464	Psychology of Language

PSYC 3466	Cognition
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	

ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
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Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	
ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	

ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Linguistics/English Combined-Major Requirements

Code	Title	Hours
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Experiential Learning

Complete one of the following options, or complete a study abroad: 4-8

Junior/Senior Honors Project

LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2
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Directed Study

LING 4996	
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Integrative Course

LING 3454	History of English	4
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Junior/Senior Seminar

Code	Title	Hours
ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	
or LING 4654	Seminar in Linguistics	

Linguistics and English Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
ENGL 1111	4	ENGL 1400	4				
MATH 1215	4	Foreign language core course	4				
Elective	4	Elective	4				
		16		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3454	4	LING 3450	4	Vacation	0	Co-op	0
ENGL 1410 or 1160	4	Linguistics elective	4				
Foreign language core course	4	Theories and methods course	4				
Elective	4	Elective	4				
		EESC 2000		1			
		16		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3422	4	Elective	4	Co-op	0
		Pre-19th century literature course	4	Elective	4		
		Comparative literature course	4				
		ENGL 3315	4				
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3412	4	Elective	4	Co-op	0
		Linguistics elective	4	Elective	4		
		Writing course	4				

	19th-, 20th-, and 21st-century literature course	4	
		0	16
			8
			0
Year 5			
Fall	Hours	Spring	Hours
Co-op	0	Linguistics elective	4
		Junior/senior seminar	4
		Foreign language core course	4
		Experiential learning research course or elective	4
	0		16

Total Hours: 129

Linguistics, Minor

The minor in linguistics provides students with an opportunity to pursue coursework in linguistics while earning a major in another domain. Students earning a minor in linguistics will gain knowledge about language at the structural and socio-cultural levels.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3422 or LING 3450	Phonology Syntax	4

Elective Courses

Code	Title	Hours
Complete two additional courses from the following range:		8
LING 2000 to LING 4996		

GPA Requirement

2.000 GPA required in the minor

Marine and Environmental Sciences

Website (<http://www.northeastern.edu/mes>)

Geoffrey C. Trussell, PhD

Professor and Chair

Rebeca Rosengaus, PhD

Associate Professor and Associate Chair

14 Holmes Hall

617.373.3176

617.373.4378 (fax)

Mark R. Patterson, Professor, m.patterson@northeastern.edu

Richard Bailey, Professor, r.bailey@northeastern.edu

Jonathan H. Grabowski, Associate Professor,

j.grabowski@northeastern.edu

The Department of Marine and Environmental Sciences' programs are designed to help students develop an in-depth understanding of the processes that affect the earth's surface and that have the greatest impacts on society. Graduates of such programs contribute to the solution of environmental problems such as soil or groundwater contamination, flooding, slope stability, shore erosion related to changing land use, or coping with the impact of sea-level rise or changing weather patterns related to global warming. Commonly, environmental professionals are expected to work effectively as part of a multidisciplinary team containing scientists, engineers, and professionals who can evaluate the legal, economic, political, and social ramifications of complex environmental problems. As part of their undergraduate program, Northeastern emphasizes experiential, off-campus learning in addition to classroom learning, which is designed to help our students to become well grounded in their field of study and to work effectively with others to study and address real problems.

Our Bachelor of Science in Environmental Science degree is organized for students who seek a comprehensive understanding of the scientific implications of environmental issues and the ways that environmental scientists from a range of disciplines can approach their solution. Every student has an opportunity to develop core knowledge in geology, biology, chemistry, and mathematics early in the program. Students then select one of three concentrations—marine science, conservation science, or geoscience—as a program focus for their upper-level course work. We also provide an independent track for students whose interests do not fall into one of these four areas. Students who elect this option work with a faculty advisor to identify a group of five mid- to upper-level science courses that are aligned with the student's career interests. (Students interested in studying environmental issues from a policy-based perspective should consider the BA in environmental studies (p. 516).)

Our Bachelor of Science in Marine Biology degree is designed to provide a strong foundation in marine biology and related disciplines. This major is offered through Northeastern University's Marine Science Center in Nahant.

A number of combined-major programs are offered; these can help focus a student's course choices along avenues that faculty feel are particularly appropriate.

Fieldwork is a valued component of training in our programs, and many of our courses use field sites throughout New England to demonstrate environmental processes or problems in their full complexity. In addition to sponsoring local trips, we have taken students on one longer field excursion each year to Iceland, the Cascade Mountains of Washington, the island of San Salvador in the Bahamas, or the Grand Canyon. Students also have the option to complete undergraduate research experiences with a faculty member. Undergraduate research projects can involve fieldwork and/or lab work completed under the guidance of faculty.

Many of our recent graduates work for environmental or geotechnical firms or continue their studies in graduate school. Students who

participate in the co-op program typically work with local engineering or environmental consulting companies or with government agencies. These jobs often involve assessing building sites, evaluating land use, and studying problems concerned with groundwater contamination and remediation.

Three Seas Program

The Three Seas Program allows advanced undergraduate and beginning graduate students in biology and related areas to spend a year of field study in three diverse marine environments.

The program begins in the spring semester at Northeastern University's Marine Science Center in Nahant, 12 miles north of the main campus. Courses the following fall are conducted at the University of Washington's Friday Harbor Laboratories on San Juan Island, which is 70 miles north of Seattle and part of an archipelago that lies between the mainland and Vancouver Island, and at the Smithsonian Tropical Research Institute in Bocas del Toro, Panama, where students engage in tropical biology research. For more information, contact Mark Patterson at 781.581.7370 (ext. 313), or visit the Three Seas Program website at www.northeastern.edu/threeseas (<http://www.northeastern.edu/threeseas>).

Massachusetts Bay Marine Studies Consortium

Northeastern University students may take classes at the Massachusetts Bay Marine Studies Consortium. The consortium's course offerings are interdisciplinary and seek to bridge academic disciplines and current concerns in the marine world. For more information, contact the marine studies program director, Professor Rebeca Rosengaus at 617.373.7032 or at r.rosengaus@northeastern.edu.

Sea Education Association

SEA Semester is an interdisciplinary program focusing on the sea, in which students undertake course work ashore followed by a practical component at sea. The program combines intensive research in the areas of oceanography, maritime studies, and nautical science with hands-on experience aboard a traditional sailing ship. Piloting, celestial navigation, and practical seamanship are learned together with oceanographic sampling techniques and marine laboratory procedures during a six-week voyage on a ship sailing either on the Atlantic or Pacific oceans. Critical thinking, problem solving, team building, and leadership skills are emphasized throughout the program. Some cruises focus on specialized topics including oceans and climate, Caribbean studies, or Polynesian studies. Through our affiliation with the Sea Education Association, SEA Semester courses earn Northeastern credit. The program is appropriate for students in biology, environmental and physical sciences, environmental studies, American studies, and most other areas within the liberal arts and sciences. For more information, contact the faculty advisor for marine biology, Professor Mark Patterson (Marine Science Center), at 781.581.7370, extension 313, or by email (m.patterson@northeastern.edu).

Marine Science Center Summer Program in Marine Biology

The summer program allows students to participate in intensive courses at the Marine Science Center (MSC). Students conduct independent research at the MSC laboratory throughout the year. Graduate students from other universities are encouraged to use the laboratory and field sites for thesis research.

Academic Progression Standards

Same as college standards.

Programs

Bachelor of Arts (BA)

- Environmental Studies (p. 516)
- Environmental Studies and History (p. 521)
- Environmental Studies and International Affairs (p. 522)
- Environmental Studies and Philosophy (p. 526)
- Environmental Studies and Political Science (p. 527)
- Sociology and Environmental Studies (p. 530)

Bachelor of Science (BS)

- Environmental Science (p. 530)
- Ecology and Evolutionary Biology (p. 535)
- Marine Biology (p. 538)
- Computer Science and Environmental Science (p. 318)
- Environmental Geology and Chemistry (p. 499)
- Environmental Studies and Economics (p. 549)
- Information Science and Environmental Science (p. 362)

Minors

- Environmental Geology (p. 552)
- Environmental Science (p. 553)
- Environmental Studies (p. 553)
- Geology (p. 554)
- Marine Biology (p. 554)
- Marine Studies (p. 555)

Environmental Studies, BA

Malcolm D. Hill, PhD

Associate Professor

Brian Helmuth, PhD

Professor

14 Holmes Hall

617.373.3176

617.373.4378 (fax)

Malcolm D. Hill, Associate Professor, m.hill@northeastern.edu

Brian Helmuth, Professor and Director of the Sustainable Science and Policy Initiative, b.helmuth@northeastern.edu

The Bachelor of Arts in Environmental Studies degree is designed to provide a flexible platform for students whose primary interest is in the area of environmental policy. In their first two years, all environmental studies majors complete introductory courses in the sciences (biology, chemistry, geology), as well as introductory-to intermediate-level course work in economics, political science, philosophy, and sociology. Students then work with a faculty advisor to select a cluster composed of intermediate- to upper-level courses in an area appropriate to the student's career objectives. These cluster areas include sustainability, urban environmental issues, water issues, international affairs, public policy, and marine studies. A senior thesis is required in the environmental studies major. (Students interested in studying environmental issues from a science-based perspective should consider the BS in environmental science (p. 530).)

A number of combined-major programs are offered; these can help focus a student's course choices along avenues that faculty feel are particularly appropriate.

Students in the environmental studies program are prepared to work in environmental planning, regulation, policy, or compliance. These broad-based programs also aim to prepare students to go into environmental education or law. Co-op experiences in environmental planning may include government internships or work in environmental compliance offices.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Environmental Studies Major Requirements

Code	Title	Hours
Introduction to College		
ENVR 1000	Marine and Environmental Sciences at Northeastern	1
Science Courses		
<i>Required Science Courses</i>		
ENVR 1101	Environmental Science	4
ENVR 1110	Global Climate Change	4
Complete one of the following:		5
CHEM 1101 and CHEM 1102 and CHEM 1103	General Chemistry for Health Sciences and Lab for CHEM 1101 and Recitation for CHEM 1101	
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	

PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171	
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Ethics Course

PHIL 1180 or PHIL 1185	Environmental Ethics The Ethics of Food	4
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Economics Course

ECON 1116	Principles of Microeconomics	4
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Sociology Course

SOCL 1246	Environment and Society	4
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Law and Political Science Courses

POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
POLS 2395 or LPSC 2301	Environmental Politics and Policy Introduction to Law, Policy, and Society	4

Environmental Impact Courses

ENVR 1112 or ENVR 1200	Environmental Geology Dynamic Earth	4
ENVR 2900 or EEMB 3460	Special Topics in Environmental Studies Conservation Biology	4
ENVR 4515	Sustainable Development	4
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4

Statistics Course

Complete one of the following:		4
ECON 2350	Statistics	
MATH 2280	Statistics and Software	
POLS 2400	Quantitative Techniques	
SOCL 2320	Statistical Analysis in Sociology	

Senior Thesis

ENVS 4997 or ENVR 4900	Senior Thesis Earth and Environmental Science Capstone	1-4
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Environmental Studies Cluster

Complete one of the following clusters:

Code	Title	Hours
International Cluster		
Select six of the following:		24
ECON 3404	International Food Economics and Policy	
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
HIST 3412		
HIST 4620		
INTL 2240	Global Population and Development	
INTL 3200	Cities in a Global Context	
PHIL 3480		
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2395	Environmental Politics and Policy	
SOCL 3485	Environment, Technology, and Society	
SOCL 4522		

Dialogue of Civilizations Restricted Courses

CIVE 4540	Resource Recovery and Waste Treatment Technologies Abroad
CIVE 4778	Climate Adaptation and Policy Abroad
ENVR 5202	Environmental Science Field Seminar Abroad

Marine Cluster

Select six of the following: 17-25

EEMB 2410	
EEMB 2420	Fisheries Biology, Policy, and Conservation
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616
EEMB 3460	Conservation Biology
EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130
ENVR 3125	Global Oceanic Change
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
ENVR 4106	
ENVR 4505	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242
ENVR 5244	
ENVR 5248	

Marine Studies Consortium Courses (unrestricted)

MARS 3210	Marine Mammals
MARS 3305	
MARS 3310	Water Resources Policy and Management
MARS 3325	Coastal Zone Management
MARS 3430	Biology of Whales

SEA Semester Restricted Courses

ENVR 2940	
ENVR 2941	
ENVR 2942	
ENVR 2943	
ENVR 3100	
ENVR 3101	
ENVR 3102	
ENVR 3103	
ENVR 3104	

Three Seas Restricted Courses

EEMB 5504	Biology of Corals
EEMB 5506	Biology and Ecology of Fishes
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508
EEMB 5512	Tropical Terrestrial Ecology
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516
EEMB 5518	Ocean and Coastal Processes
EEMB 5520	Coral Reef Ecology
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522
EEMB 5528	Marine Conservation Biology

EEMB 5532	Physiological and Molecular Marine Ecology
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534
EEMB 5536	Ocean and Coastal Sustainability
EEMB 5589	Diving Research Methods

Policy Cluster

Select six of the following: 23-24

CIVE 5270	
ECON 3423	Environmental Economics
ECON 3425	Energy Economics
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
HIST 2342	
HIST 4620	
PPUA 5260	Ecological Economics
PPUA 5270	Food Systems and Public Policy
SOCL 4522	

Sustainability Cluster

Select six of the following: 23-24

CIVE 2334	Environmental Engineering 1
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
ENVR 4505	
HIST 2342	
HIST 3412	
HIST 4620	
HIST 5295	
INTL 2240	Global Population and Development
LARC 5210	Landscape Ecology
<i>Marine Studies Consortium Courses (unrestricted)</i>	
MARS 3310	Water Resources Policy and Management

Urban Cluster

Select six of the following: 23-24

EEMB 4001	Landscape and Restoration Ecology
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
ECON 3415	
ECON 3420	Urban Economic Issues
ECON 3422	Economics of Transportation
ECON 3423	Environmental Economics
HIST 2342	
HIST 4620	
INTL 3200	Cities in a Global Context
LARC 5210	Landscape Ecology
POLS 2345	Urban Policies and Politics
PHIL 3480	
POLS 2357	Growth and Decline of Cities and Suburbs
SOCL 1247	
SOCL 3485	Environment, Technology, and Society
SOCL 4522	

Water Cluster

Select six of the following: 24-25

CIVE 2334	Environmental Engineering 1
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500
ENVR 4505 or MARS 3300	
HIST 2342	
<i>Marine Studies Consortium Courses (unrestricted)</i>	
MARS 3310	Water Resources Policy and Management
MARS 3325	Coastal Zone Management

Interdisciplinary Cluster

Create a plan of six courses under the guidance of the program director. 23-27

Environmental Studies Major Credit Requirement

Complete 73 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, Two Co-ops in Spring/Summer 1

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
ENVR 1000	1	ECON 1116	4	Elective	4	Elective	4	
ENVR 1101	4	ENGW 1111	4	Elective	4	Elective	4	
POLS 1150 and POLS 1151	4	ENVR 1112 or 1200	4					
SOCL 1246	4	PHIL 1180 or 1185	4					
Foreign language course	4							
		17			16			8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
EESC 2000	1	Co-op	0	Co-op	0	Cluster course	4	
ENVR 1110	4					Elective	4	
ENVR 2900 or EEMB 3460	4							
Foreign language course	4							
Science course	5							
		18			0			0
Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
ENVR 5210 or 5250	4	Co-op	0	Co-op	0	Cluster course	4	

POLS 2395 or LPSC 2301	4			Elective	4
Cluster course	4				
Foreign language course	4				
Statistics course	4				
		20			0
					0
					8

Year 4

Fall	Hours	Spring	Hours		
ENGV 3303, 3307, 3308, or 3315	4	ENVS 4997 or ENVR 4900	1-4		
ENVR 4515	4	Cluster course	4		
Cluster course	4	Elective	4		
Cluster course	4	Elective	4		
		16			13-16

Total Hours: 132-135

Four Years, Two Co-ops in Summer 2/Fall

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
ENVR 1000	1	ECON 1116	4	Elective	4	Elective	4	
ENVR 1101	4	ENGW 1111	4	Elective	4	Elective	4	
POLS 1150 and POLS 1151	4	ENVR 1112 or 1200	4					
SOCL 1246	4	PHIL 1180 or 1185	4					
Foreign language course	4							
		17			16			8
Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
ENVR 2900 or EEMB 3460	4	EESC 2000	1	Cluster course	4	Co-op	0	
POLS 2395 or LPSC 2301	4	ENVR 1110	4	Elective	4			
Cluster course	4	ENVR 4515	4					
Foreign language course	4	Cluster course	4					
Statistics course	4	Science course	5					
		20			18			8
								0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3303, 3307, 3308, or 3315	4	Cluster course	4	Co-op	0
		ENVR 5210	4	Elective	4		
		Cluster course	4				
		Foreign language course	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	ENVS 4997 or ENVR 4900	1-4
		Cluster course	4
		Elective	4
		Elective	4
	0		13-16

Total Hours: 132-135

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 1000	1	ECON 1116	4	Vacation	0	Vacation	0
ENVR 1101	4	ENGW 1111	4				
POLS 1150 and POLS 1151	4	ENVR 1112 or 1200	4				
SOCL 1246	4	PHIL 1180 or 1185	4				
Foreign language course	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EESC 2000	1	Co-op	0	Co-op	0	Elective	4
ENVR 1110	4					Elective	4
ENVR 2900 or EEMB 3460	4						
Foreign language course	4						
Science course	5						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 4515	4	Co-op	0	Co-op	0	Elective	4
POLS 2395 or LPSC 2301	4					Elective	4

Cluster course	4				
Foreign language course	4				
Statistics course	4				
	20		0		0
					8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 5210 or 5250	4	Co-op	0	Co-op	0	Vacation	0
Cluster course	4						
Cluster course	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ENGW 3303, 3307, 3308, or 3315	4	ENVS 4997 or ENVR 4900	1-4
Cluster course	4	Cluster course	4
Cluster course	4	Elective	4
Elective	4	Elective	4
	16		13-16

Total Hours: 132-135

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 1000	1	ECON 1116	4	Vacation	0	Vacation	0
ENVR 1101	4	ENGW 1111	4				
POLS 1150 and POLS 1151	4	ENVR 1112 or 1200	4				
SOCL 1246	4	PHIL 1180 or 1185	4				
Foreign language course	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2900 or EEMB 3460	4	EESC 2000	1	Vacation	0	Co-op	0
POLS 2395 or LPSC 2301	4	ENVR 1110	4				
Elective	4	ENVR 4515	4				
Foreign language course	4	Cluster course	4				

Statistics course	4	Science course	5			
	20		18		0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 5210 or 5250	4	Elective	4	Co-op	0
		Cluster course	4	Elective	4		
		Cluster course	4				
		Foreign language course	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3303, 3307, 3308, or 3315	4	Elective	4	Co-op	0
		Cluster course	4	Elective	4		
		Cluster course	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	ENVS 4997 or ENVR 4900	1-4
		Cluster course	4
		Elective	4
		Elective	4
	0		13-16

Total Hours: 132-135

Environmental Studies and History, BA

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, and political aspects of the world's environmental problems through historical perspectives and backgrounds.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Science Requirements		
ENVR 1101	Environmental Science	4
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5
ENVR 1445		4
Humanities Requirement		
PHIL 1180	Environmental Ethics	4
Social Science Requirements		
ECON 1116	Principles of Microeconomics	4
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
SOCL 1246	Environment and Society	4
Environmental Studies Electives		
Complete two of the following:		8
ECON 3423	Environmental Economics	
PHIL 3480		
POLS 2395	Environmental Politics and Policy	

History Requirements

Code	Title	Hours
History Requirements		
HIST 1130	Introduction to the History of the United States	4
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	4
HIST 1201	First-Year Seminar	4
HIST 2342		4
History Seminar		
HIST 2301 and HIST 2302	The History Seminar and Historical Writing	5
History/Geographic-Area Electives		
Complete two of the following:		8
ASNS 1150	East Asian Studies	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
History-Area Electives		
Complete four HIST courses, approved by a faculty advisor, focused on an idea or geographic area. These courses must be numbered 2000 or higher.		16

Integrative Courses

Code	Title	Hours
Required Integrative Course		
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
Integrated Elective		
Complete one of the following:		4
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

Experiential Learning and Capstone

Code	Title	Hours
Experiential Learning		
Complete an approved activity from either department, combined with reflection in capstone.		
Capstone Course		
Complete one of the following:		1-4
ENVR 4997 or ENVS 4997	Senior Thesis	
ENVR 4900	Earth and Environmental Science Capstone	
ENVR 4970	Junior/Senior Honors Project 1	
HIST 4701	Capstone Seminar	

Combined-Major Credit Requirement

Complete 91 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	ENVR 1202 and ENVR 1203	5	Vacation	0	Vacation	0
ENVR 1000	1	HIST 1170	4				
ENVR 1101	4	HIST 1201	4				
HIST 1130 and HIST 1131	4	PHIL 1180	4				
SOCL 1246	4						
		17	17	0	0	0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116	4	EESC 2000	1	Vacation	0	Co-op	0
HIST 2342	4	ENVR 1445	4				
Foreign language course	4	Elective	4				
History elective	4	Foreign language course	4				

History elective	4	HIST geographic elective	4				
		20	17	0	0	0	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 3300 and ENVR 3301	5	Elective	4	Co-op	0
		POLS 1150 and POLS 1151	4	Elective	4		
		Foreign language course	4				
		ENVR undergraduat elective	4				
		0	17	8	0	0	0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3308 or 3315	4	Elective	4	Co-op	0
		HIST 2301 and HIST 2302	5	Elective	4		
		History elective	4				
		History elective	4				
		0	17	8	0	0	0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Capstone course	1-4				
		ENVR undergraduat elective	4				
		HIST geographic elective	4				
		Integrative major requirement	4				
		0	13-16				

Total Hours: 134-137

Environmental Studies and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of the international issues that influence the scientific, cultural, societal, political, and economic aspects of the world's environmental problems and the ways in which such environmental challenges can be ameliorated and/or solved.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
<i>Philosophy</i>		
PHIL 1180	Environmental Ethics	4
<i>Sociology</i>		
SOCL 1246	Environment and Society	4
<i>Political Science</i>		
POLS 2395	Environmental Politics and Policy	4
Science Component		
<i>Biology</i>		
BIOL 1141 or BIOL 1143	Microbes and Society Biology and Society	4
<i>Earth and Environmental Sciences</i>		
Complete one of the following:		4
ENVR 1200	Dynamic Earth	
ENVR 1110	Global Climate Change	
ENVR 1112	Environmental Geology	
<i>Environment</i>		
ENVR 1101	Environmental Science	4
<i>Quantitative Methods</i>		
Complete one of the following:		4-5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
MATH 2280	Statistics and Software	
<i>Planning</i>		
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160 and POLS 1161	International Relations and Recitation for POLS 1160	4
Global Dynamics		
Complete three of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		12
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHIL 1272	Ethics in the World's Religions	
PHIL 5001	Global Justice	
<i>Conflict and Security</i>		
CRIM 4630	Political Crime and Terrorism	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 3330	The Global Cold War	
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media Covering Conflicts: Peace, War, and the Media	
PHIL 5001	Global Justice	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3430	Revolution, Civil War, and Insurrection	
<i>Globalization</i>		
INTL 2240	Global Population and Development	

INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health

POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
Complete two regional analysis courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		8

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion

PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britannia and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Courses

Code	Title	Hours
Integrative Courses		
ECON 3423	Environmental Economics	4
or ECON 1290	History of the Global Economy	
ENVR 4515	Sustainable Development	4
HIST 2211	The World Since 1945	4
INTL 4700	Senior Capstone Seminar in International Affairs	4
or ENVS 4997	Senior Thesis	

Environmental Studies and International Affairs Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

**Plan of Study
Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	ENVR 1200, 1200, or 1110	4	Vacation	0	Vacation	0
ENVR 1101	4	PHIL 1180	4				
INTL 1101	4	POLS 1160 and POLS 1161	4				
SOCL 1246	4	Foreign language course	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1141 or 1143	4	EESC 2000	1	Vacation	0	Co-op	0
HIST 2211	4	POLS 2395	4				
Foreign language course	4	Foreign language course	4				
INAF regional analysis course 1	4	INAF global dynamics course 1	4				
		INAF regional analysis course 2	4				
		16			17	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	International experiential learning	16	Elective	4	Co-op	0
				Quantitative methods course	4-5		
	0		16		8-9		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON 3423 or 1290	4	Elective	4	Co-op	0
		ENGW 3308 or 3315	4	Elective	4		
		ENVR 5210 or 5250	4				
		INTL 3400	4				
		INAF global dynamics course 2	4				
	0		20		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	ENVR 4515	4
		INTL 4700 or ENVS 4997	4
		ENVR undergraduate elective	4
		INAF global dynamics course 3	4
	0		16

Total Hours: 133-134

Environmental Studies and Philosophy, BA

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, and political aspects of the world's environmental problems while considering the philosophical, moral, and ethical impacts that such decisions have on human-environment interactions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Note: Principles of Microeconomics (ECON 1116) is a recommended prerequisite for Environmental Economics (ECON 3423), and American Government (POLS 1150) is a recommended prerequisite for Environmental Politics and Policy (POLS 2395).

Code	Title	Hours
Social Science Component		
ECON 3423	Environmental Economics	4
HIST 2342		4
POLS 2395	Environmental Politics and Policy	4
SOCL 1246	Environment and Society	4
Science Component		
<i>Global Climate Change</i>		
ENVR 1110	Global Climate Change	4
<i>Earth and Environmental Sciences</i>		
Complete one of the following:		4
ENVR 1112	Environmental Geology	
ENVR 1200	Dynamic Earth	
<i>Environment</i>		
ENVR 1101	Environmental Science	4
<i>Quantitative Methods</i>		
Complete one of the following:		4-5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
MATH 2280	Statistics and Software	

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 1180	Environmental Ethics	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Philosophy of Science/Environment		
Complete one of the following:		4
PHIL 1105	Science and Pseudoscience	
PHIL 4510	Philosophy of Science	
Restricted Electives		
Complete two of the following with at least one course at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	

PHIL 4510	Philosophy of Science
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Additional Electives

Complete two additional PHIL courses. 8

Integrative Courses

Code	Title	Hours
ENVR 5210	Environmental Planning	4
ENVR 5250	Geology and Land-Use Planning	4

Environmental Studies and Philosophy Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirement

128 total semester hours required

Environmental Studies and Political Science, BA

In this combined major, successful undergraduates will develop an awareness of the scientific, cultural, societal, and political aspects of the world’s environmental problems through the lens of geopolitical decisions, public policy, and environmental regulations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
<i>Philosophy</i>		
PHIL 1180	Environmental Ethics	4

<i>Sociology</i>		
SOCL 1246	Environment and Society	4
<i>Economics</i>		
ECON 1116	Principles of Microeconomics	4
ECON 3423	Environmental Economics	4

Science Component

Complete one course in each of the following four subject areas:

<i>Biology</i>		
ENVR 1445		4

<i>Earth and Environmental Sciences</i>		
Complete one of the following: 4		

ENVR 1112	Environmental Geology	
ENVR 1200	Dynamic Earth	

<i>Environment</i>		
ENVR 1101	Environmental Science	4

<i>Quantitative Methods</i>		
Complete one of the following: 4-5		

ENVR 3300	Geographic Information Systems and Lab for ENVR 3300	
MATH 2280	Statistics and Software	

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4

Political Thought		
Complete one of the following: 4		

POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Restricted Electives		
Complete two of the following: 8		

POLS 2334	Bureaucracy and Government Organizations	
POLS 2390	Science, Technology, and Public Policy	
POLS 3307	Public Policy and Administration	
POLS 3407	International Organizations	
POLS 3487	Politics of Developing Nations	

Political Science Electives		
Complete two POLS courses. 8		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 528).

- Comparative Politics (p. 528)
- International Relations and Diplomacy (p. 528)

- Law and Legal Studies (p. 528)
- Public Policy (p. 528)

Integrative Courses

Code	Title	Hours
Integrative Courses		
Complete two of the following:		8
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
POLS 2395	Environmental Politics and Policy	

Capstone Requirement

Complete one of the following:		1-8
ENVR 4900	Earth and Environmental Science Capstone	
ENVR 4997	Senior Thesis	
POLS 4701	Political Science Senior Capstone	
POLS 4702 and POLS 4703	Senior Thesis Preparation and Senior Thesis	

Environmental Studies and Political Science Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Plan of Study

Five Years, Three Co-ops in Spring/Summer 1

Year 1	Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
	ENGW 1111	4	MATH 1215	4	Vacation	0	Vacation	0
	ENVR 1101	4	PHIL 1180	4				

POLS 1150 and POLS 1151	4	POLS 1155 and POLS 1156	4
SOCL 1246	4	Foreign language course	4
		16	16
		0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116	4	Co-op	0	Co-op	0	Elective	4
ENVR 1104, ENVR 1112, or ENVR 1200	4					Elective	4
POLS 1160 and POLS 1161	4						
Foreign language course	4						
		16	0	0	0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 3423	4	Co-op	0	Co-op	0	Elective	4
POLS 2400	4					Elective	4
Foreign language course	4						
Political thought course	4						
Elective	4						
		20	0	0	0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315 or 3308	4	Co-op	0	Co-op	0	Vacation	0
ENVR 5210 or 5250	4						
POLS undergraduate elective	4						
Qualitative methods course	4-5						
		16-17	0	0	0		0

Year 5

Fall	Hours	Spring	Hours
ENVR 5250 or POLS 2395	4	ENVR 1445	4
Capstone or elective	1-4	Capstone or elective	1-4
Elective	4	Elective	4
POLS undergraduate elective	4	POLS undergraduate elective	4

POLS undergraduate elective	4
17-20	13-16

Total Hours: 130-137

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	MATH 1215	4	Vacation	0	Vacation	0
ENVR 1101	4	PHIL 1180	4				
POLS 1150 and POLS 1151	4	POLS 1155 and POLS 1156	4				
SOCL 1246	4	Foreign language course	4				
		16	16	0	0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116	4	ECON 3423	4	Vacation	0	Co-op	0
ENVR 1104, ENVR 1112, or ENVR 1200	4	POLS 2400	4				
POLS 1160 and POLS 1161	4	Elective	4				
Foreign language course	4	Foreign language course	4				
		POLS undergraduate elective	4				
		16	20	0	0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 1445	4	Elective	4	Co-op	0
		Political thought course	4	Elective	4		
		POLS undergraduate elective	4				
		Qualitative methods course	4-5				
		0	16-17	8	0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315 or 3308	4	Elective	4	Co-op	0
		ENVR 5210 or 5250	4	Elective	4		
		Capstone or elective	1-4				
		Elective	4				

	POLS undergraduate elective	4		
		0	17-20	8
Year 5				
Fall	Hours	Spring	Hours	
Co-op	0	ENVR 5250 or POLS 2395	4	
	Capstone or elective		1-4	
	Elective		4	
	POLS undergraduate elective		4	
		0	13-16	

Total Hours: 130-137

Sociology and Environmental Studies, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2321	Research Methods in Sociology	4
ANTH 2305	Global Markets and Local Culture	4
Statistics		
Complete one of the following:		4
SOCL 2320	Statistical Analysis in Sociology	
ENVR 2500	Biostatistics	
Capstone		
Complete one of the following:		
SOCL 4600	Senior Seminar	
ENVS 4997	Senior Thesis	
ENVR 4900	Earth and Environmental Science Capstone	

Sociology Elective A

Please note that SOCL 1246 may not be used to fulfill this requirement as it is required in the major. Complete one course in the following range:

SOCL 1000 to SOCL 2999

Sociology Elective B

Complete three additional sociology courses in the following range:

SOCL 3000 to SOCL 5999

Environmental Studies Requirements

Code	Title	Hours
Science Requirements		
ENVR 1101	Environmental Science	4
ENVR 1112	Environmental Geology	4
or ENVR 1200	Dynamic Earth	
or ENVR 3125	Global Oceanic Change	
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
EEMB 3460	Conservation Biology	4
Environmental Studies Elective A		
Complete one of the following:		4
PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	
POLS 1150	American Government	
POLS 2395	Environmental Politics and Policy	
ENVR 1110	Global Climate Change	
ENVR 2900	Special Topics in Environmental Studies	

Environmental Studies Electives B

Complete three of the following:		12
ENVR 3000 to ENVR 5999		
EEMB 3000 to EEMB 5999		
PPUA 3000 to PPUA 5999		

Integrative Requirements

Code	Title	Hours
SOCL 1246	Environment and Society	4
ENVR 4515	Sustainable Development	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Sociology and Environmental Studies Combined-Major Credit Requirement

Complete 81 semester hours in the major.

Program Requirements

128 total semester hours required

Environmental Science, BS

Our Bachelor of Science in Environmental Science degree is organized for students who seek a comprehensive understanding of the scientific implications of environmental issues and the ways that environmental scientists from a range of disciplines can approach their solution. Every student has an opportunity to develop core knowledge in geology, biology, chemistry, and mathematics early in the program. Students then select

one of three concentrations—marine science, conservation science, or geoscience—as a program focus for their upper-level course work. We also provide an independent track for students whose interests do not fall into one of these three areas. Students who elect this option work with a faculty advisor to identify a group of five mid- to upper-level science courses that are aligned with the student's career interests. (Students interested in studying environmental issues from a policy-based perspective should consider the BA in environmental studies (p. 516).)

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Environmental Science Major Requirements

Code	Title	Hours
Introduction to College		
ENVR 1000	Marine and Environmental Sciences at Northeastern	1
Geology Courses		
ENVR 1101	Environmental Science	4
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
Calculus 1		
MATH 1241	Calculus 1	4
or MATH 1251	Calculus and Differential Equations for Biology 1	
or MATH 1341	Calculus 1 for Science and Engineering	
Calculus 2 or Biostatistics		
Complete one of the following:		4-5
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
MATH 1242	Calculus 2	4
or MATH 1252	Calculus and Differential Equations for Biology 2	
or MATH 1342	Calculus 2 for Science and Engineering	
General Chemistry 1		
CHEM 1101 and CHEM 1102 and CHEM 1103	General Chemistry for Health Sciences and Lab for CHEM 1101 and Recitation for CHEM 1101	5
or CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
General Chemistry 2		
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
Organic Chemistry		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5

Physics 1

Complete one of the following:		5
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	
PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171	

Earth and Environmental Science Capstone

ENVR 4900	Earth and Environmental Science Capstone	1-4
or ENVR 4997	Senior Thesis	

Environmental Science Concentrations

Complete one of the following concentrations:

CONCENTRATION IN MARINE SCIENCE

Code	Title	Hours
<i>Required Marine Science Courses</i>		
ENVR 3125	Global Oceanic Change	4
ENVR 4106		4
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
PHYS 1165 and PHYS 1166 and PHYS 1167	Physics 2 and Lab for PHYS 1165 and Recitation for PHYS 1165	
PHYS 1175 and PHYS 1176 and PHYS 1177	Physics 2 for Bioscience and Bioengineering and Lab for PHYS 1175 and Interactive Learning Seminar for PHYS 1175	
<i>Marine Science Elective Courses</i>		
Complete six of the following:		20-25
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	
or BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
or BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
BIOL 5100	Biology Colloquium	
EEMB 2400	Introduction to Evolution	
EEMB 2420	Fisheries Biology, Policy, and Conservation	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

EEMB 3120	Physical Biology of Marine Organisms
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242
<i>Marine Studies Consortium Courses (unrestricted)</i>	
MARS 3210	Marine Mammals
MARS 3310	Water Resources Policy and Management
MARS 3325	Coastal Zone Management
MARS 3430	Biology of Whales
<i>Three Seas Restricted Courses</i>	
EEMB 5504	Biology of Corals
EEMB 5506	Biology and Ecology of Fishes
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508
EEMB 5512	Tropical Terrestrial Ecology
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516
EEMB 5518	Ocean and Coastal Processes
EEMB 5520	Coral Reef Ecology
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522
EEMB 5528	Marine Conservation Biology
EEMB 5532	Physiological and Molecular Marine Ecology
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534
EEMB 5536	Ocean and Coastal Sustainability
EEMB 5589	Diving Research Methods
<i>SEA Semester restricted courses</i>	

CONCENTRATION IN CONSERVATION SCIENCE

Code	Title	Hours
<i>Required Conservation Science Courses</i>		
BIOL 1107 and BIOL 1108 or BIOL 1111 and BIOL 1112 or BIOL 1115 and BIOL 1116	Foundations of Biology and Lab for BIOL 1107 General Biology 1 and Lab for BIOL 1111 General Biology 1 for Engineers and Lab for BIOL 1115	5
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	5
EEMB 3460	Conservation Biology	4
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
Complete one of the following:		3-4
ECON 3423	Environmental Economics	
POLS 2395	Environmental Politics and Policy	
SOCL 3485	Environment, Technology, and Society	

Conservation Science Electives

Note: Additional upper-level electives (numbered 2000 and above) may also be acceptable with department advisor approval.

Complete three of the following:		12-15
BIOL 3401	Comparative Vertebrate Anatomy	
BIOL 3403	Animal Behavior	
BIOL 5499	Plant Biotechnology	
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	
CIVE 4778	Climate Adaptation and Policy Abroad	
CIVE 5271	Solid and Hazardous Waste Management	
EEMB 2290	Ecology and Evolution of Behavior	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	
EEMB 3120	Physical Biology of Marine Organisms	
EEMB 3455	Ecosystems Ecology	
EEMB 3465	Ecological and Conservation Genomics	
EEMB 3475	Wildlife Ecology	
EEMB 4001	Landscape and Restoration Ecology	
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	
ENVR 3125	Global Oceanic Change	
ENVR 3200	Water Resources	
ENVR 4504	Environmental Pollution	
ENVR 4515	Sustainable Development	
ENVR 4563	Advanced Spatial Analysis	
ENVR 5190	Soil Science	
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	
<i>Three Seas Restricted Courses</i>		
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	
EEMB 5512	Tropical Terrestrial Ecology	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5520	Coral Reef Ecology	

CONCENTRATION IN GEOSCIENCE

Code	Title	Hours
<i>Required Geoscience Courses</i>		
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	5
ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4
<i>Physics 2</i>		
Complete one of the following:		5

PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155
PHYS 1165 and PHYS 1166 and PHYS 1167	Physics 2 and Lab for PHYS 1165 and Recitation for PHYS 1165
PHYS 1175 and PHYS 1176 and PHYS 1177	Physics 2 for Bioscience and Bioengineering and Lab for PHYS 1175 and Interactive Learning Seminar for PHYS 1175

Geoscience Concentration Electives

Complete four of the following: 16-20

ENVR 3125	Global Oceanic Change
ENVR 3418	Geophysics
ENVR 4504	Environmental Pollution
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500
ENVR 4563	Advanced Spatial Analysis
ENVR 5190	Soil Science
ENVR 5201	Geologic Field Seminar
ENVR 5230 and ENVR 5231	Structural Geology and Lab for ENVR 5230
ENVR 5240 and ENVR 5241	Sedimentary Basin Analysis and Lab for ENVR 5240
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242
ENVR 5270 and ENVR 5271	Glacial and Quaternary History and Lab for ENVR 5270

Dialogue of Civilizations restricted courses

ENVR 5202	Environmental Science Field Seminar Abroad
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Environmental Science Major Credit Requirement

Complete 77 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Elective	4	Elective	4
ENVR 1000	1	ENGV 1111	4	Elective	4	Elective	4
ENVR 1101	4	ENVR 1200 and ENVR 1201	5				
MATH 1241	4	MATH 1242	4				
Elective	4						
18		18		8		8	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EESC 2000	1	Co-op	0	Co-op	0	Elective	4
PHYS 1161 and PHYS 1162 and PHYS 1163	5					Elective	4
Concentration course	4						
Elective	4						
Elective	4						
18		0		0		8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 1212	5	Co-op	0	Co-op	0	Elective	4
Concentration course	4					Elective	4
Concentration course	4						
Elective	4						
17		0		0		8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGV 3303, 3307, or 3315	4	ENVR 4900 or 4997	1-4				
Concentration course	4	Concentration course	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
16		13-16					

Total Hours: 132-135

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 1000	1	CHEM 1211 and CHEM 1212 and CHEM 1213	5	Elective	4	Elective	4
ENVR 1101	4	ENGV 1111	4	Elective	4	Elective	4
MATH 1241	4	ENVR 1200 and ENVR 1201	5				
PHYS 1161 and PHYS 1162 and PHYS 1163	5	MATH 1242	4				
Elective	4						
18		18		8		8	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1214 and CHEM 1215 and CHEM 1216	5	CHEM 2311 and CHEM 1212	5	Elective	4	Co-op	0
Concentration course	4	EESC 2000	1	Elective	4		
Elective	4	Concentration course	4				
Elective	4	Concentration course	4				
		Elective	4				
	17		18		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3303, 3307, or 3315	4	Elective	4	Co-op	0
		Concentration course	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	ENVR 4900 or 4997	1-4
		Concentration course	4
		Elective	4
		Elective	4
	0		13-16

Total Hours: 132-135

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 1000	1	CHEM 1211 and CHEM 1212 and CHEM 1213	5	Vacation	0	Vacation	0
ENVR 1101	4	ENGW 1111	4				
MATH 1241	4	ENVR 1200 and ENVR 1201	5				
PHYS 1161 and PHYS 1162 and PHYS 1163	5	MATH 1242	4				
Elective	4						
	18		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1214 and CHEM 1215 and CHEM 1216	5	Co-op	0	Co-op	0	Elective	4
EESC 2000	1					Elective	4
Concentration course	4						
Elective	4						
Elective	4						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	Co-op	0	Co-op	0	Elective	4
Concentration course	4					Elective	4
Elective	4						
Elective	4						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3303, 3307, or 3315	4	Co-op	0	Co-op	0	Vacation	0
Concentration course	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Concentration course	4	ENVR 4900 or 4997	1-4
Elective	4	Concentration course	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		13-16

Total Hours: 132-135

Five Years, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 1000	1	CHEM 1211 and CHEM 1212 and CHEM 1213	5	Vacation	0	Vacation	0
ENVR 1101	4	ENGW 1111	4				
MATH 1241	4	ENVR 1200 and ENVR 1201	5				

PHYS 1161 and PHYS 1162 and PHYS 1163	5	MATH 1242	4				
Elective	4						
	18		18		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1214 and CHEM 1215 and CHEM 1216	5	CHEM 2311 and CHEM 2312	5	Vacation	0	Co-op	0
Concentration course	4	EESC 2000	1				
Elective	4	Concentration course	4				
Elective	4	Elective	4				
		Elective	4				
	17		18		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Concentration course	4	Elective	4	Co-op	0
		Elective	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3303, 3307, or 3315	4	Elective	4	Co-op	0
		Concentration course	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	ENVR 4900 or 4997	1-4				
		Concentration course	4				
		Elective	4				
		Elective	4				
	0		13-16				

Total Hours: 132-135

Ecology and Evolutionary Biology, BS

The Bachelor of Science in Ecology and Evolutionary Biology (EEB) degree is designed to provide a strong foundation in the fundamentals of ecology and evolutionary biology, including focal points in population, community, and ecosystem ecology; evolutionary ecology and biology;

conservation biology; population genetics; behavior; and ecological and evolutionary genomics. Our major provides unique experiential learning opportunities for students interested in the fundamentals of evolution; the ecology of terrestrial, marine, and freshwater systems; and the application of both of these in the pursuit of the conservation and restoration of natural systems. Further, students in our major have the opportunity to focus on cutting-edge techniques in the use of molecular tools to answer fundamental questions in ecology and evolution. The interdisciplinary nature of our major fosters critical thinking and creativity in scientific problem solving while instilling skills that will result in scientifically literate global citizens. The curriculum for this major also satisfies premed and prevet requirements. Courses offered by this major fulfill several core competencies required by the university: Engaging with the Natural and Designed World, Exploring Created Expression and Innovation, Conducting Formal and Quantitative Reasoning, Analyzing and Using Data, Employing Ethical Reasoning, writing-intensive courses, and capstone.

Fieldwork is a valued component of training in our programs, and several of our courses use field sites, resources, and facilities of the Marine Science Center and throughout the greater Boston area. Students interested in having a foundational education in ecology and evolutionary biology, and also participating in the Northeastern Three Seas Program, will be able to meet the requirements for both programs. All students will also have the option to complete undergraduate research experiences with faculty members in the Department of Marine and Environmental Sciences and can take advantage of our faculty networks of scientists and practitioners for additional co-op and research opportunities.

Students graduating with an EEB major will be prepared for success in pursuing graduate degrees, for working in multiple areas of science and technology—including data science and biotech sectors—and for positions with consulting companies, nonprofits, and government agencies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Due to overlap in course content, double majoring in biology and cell and molecular biology, biology and biochemistry, biology and behavioral neuroscience, or biology and marine biology is not permitted.

Ecology and Evolutionary Biology Major Requirements

Code	Title	Hours
Ecology and Evolutionary Biology		
EEMB 1101 and EEMB 1102	Foundations in Ecology and Evolutionary Biology and Lab for EEMB 1101	5

Ecology and Evolutionary Genomics

EEMB 1105 and EEMB 1106	Foundations in Ecological and Evolutionary Genomics and Lab for EEMB 1105	5
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Genetics

BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
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Evolution

EEMB 2400	Introduction to Evolution	4
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Ecology

EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	5
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Biostatistics

ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
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Supporting Courses

Code	Title	Hours
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Math

Complete one of the following: 4

MATH 1241 Calculus 1

MATH 1251 Calculus and Differential Equations for
Biology 1

Chemistry

CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
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CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5
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Physics 1

Complete one of the following: 5

PHYS 1145
and PHYS 1146
 Physics for Life Sciences 1 and Lab for PHYS 1145 |

PHYS 1151
and PHYS 1152
and PHYS 1153
 Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151 |

PHYS 1161
and PHYS 1162
 Physics 1 and Lab for PHYS 1161 |

Physics 2

Complete one of the following: 5

PHYS 1147
and PHYS 1148
 Physics for Life Sciences 2 and Lab for PHYS 1147 |

PHYS 1155
and PHYS 1156
and PHYS 1157
 Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155 |

PHYS 1165
and PHYS 1166
 Physics 2 and Lab for PHYS 1165 |

Ecology and Evolutionary Biology Topical Requirement

Code	Title	Hours
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Complete seven of the following. At least one course must be
taken from each list: 28

Evolution of Organisms

EEMB 2290 Ecology and Evolution of Behavior

EEMB 2616
and EEMB 2617
 Invertebrate Zoology and Lab for EEMB 2616 |

EEMB 2700
and EEMB 2701
 Marine Biology and Lab for EEMB 2700 |

EEMB 3450
Physiological Adaptations to the
Environment

EEMB 5504 Biology of Corals

EEMB 5506 Biology and Ecology of Fishes

EEMB 5534
and EEMB 5535
 Marine Invertebrate Zoology and Botany and Lab for EEMB 5534 |

EEMB 5548 Sociobiology

MARS 3210 Marine Mammals

MARS 3430 Biology of Whales

Ecology and Conservation Biology

EEMB 3460 Conservation Biology

EEMB 3475 Wildlife Ecology

EEMB 3465 Ecological and Conservation Genomics

EEMB 3470
and EEMB 3471
 Coastal Ecology and Sustainability and Lab for EEMB 3470 |

EEMB 4001 Landscape and Restoration Ecology

EEMB 5536 Ocean and Coastal Sustainability

EEMB 5512 Tropical Terrestrial Ecology

EEMB 5518 Ocean and Coastal Processes

EEMB 5520 Coral Reef Ecology

EEMB 5528 Marine Conservation Biology

EEMB 5532
Physiological and Molecular Marine
Ecology

ENVR 3125 Global Oceanic Change

ENVR 3150 Food Security and Sustainability

MARS 3315 Wetlands: Ecology and Hydrology

Analytical Skills

ENVR 3300 Geographic Information Systems

ENVR 4563 Advanced Spatial Analysis

EEMB 3465 Ecological and Conservation Genomics

EEMB 5522 Experimental Design Marine Ecology

CHEM 2311
and CHEM 2312
 Organic Chemistry 1 and Lab for CHEM 2311 |

CHEM 2313
and CHEM 2314
 Organic Chemistry 2 and Lab for CHEM 2313 |

EEMB 5130 Ecological Dynamics

Ecology and Evolutionary Biology Credit Requirement

Complete 81 semester hours in the major.

Ecology and Evolutionary Biology GPA Requirement

Complete all major courses with a cumulative GPA of 2.000.

Program Requirement

128 total semester hours required

Plan of Study

Five Year, Three Spring Co-ops

Year 1

Fall	Hours	Spring	Hours
EEMB 1101 and EEMB 1102	5	EEMB 1105 and EEMB 1106	5

CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5
ENVR 1000	1	PHYS 1145 and PHYS 1146	5
MATH 1241 or 1251	4	Elective	4
Elective	4		
		19	19

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours
EEMB 2302 and EEMB 2303	5	COOP 3945	0	COOP 3945	0
ENVR 2500 and ENVR 2501	5				
EEMB Elective 1	4				
Evolution of Organisms Distribution Requirement	4				
EESC 2000	1				
		19	0	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	COOP 3945	0	COOP 3945	0	Elective	4
PHYS 1147 and PHYS 1148	5					Elective	4
EEMB 2400	4						
Elective	4						
		18	0	0			8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Ecology and Conservation Biology Distribution Requirement	4	COOP 3945	0	COOP 3945	0
EEMB Elective 2	4				
Analytical Skills Requirement	4				
Elective	4				
		16	0	0	

Year 5

Fall	Hours	Spring	Hours
EEMB Elective 3	4	Elective	4
EEMB Elective 4	4	Elective	4

Elective	4	Elective	4
Experiential Credit (Capstone/Thesis)	4	Elective	4
		16	16

Total Hours: 131

Five Year, Three Fall Co-ops

Year 1

Fall	Hours	Spring	Hours
EEMB 1101 and EEMB 1102	5	EEMB 1105 and EEMB 1106	5
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5
ENVR 1000	1	PHYS 1145 and PHYS 1146	5
MATH 1241 or 1251	4	Elective	4
Elective	4		
		19	19

Year 2

Fall	Hours	Spring	Hours	Summer 2	Hours
EEMB 2302 and EEMB 2303	5	BIOL 2301 and BIOL 2302	5	COOP 3945	0
ENVR 2500 and ENVR 2501	5	PHYS 1147 and PHYS 1148	5		
EEMB Elective 1	4	EEMB 2400	4		
Evolution of Organisms Distribution Requirement	4	Elective	4		
EESC 2000	1				
		19	18		0

Year 3

Fall	Hours	Spring	Hours	Summer 2	Hours
COOP 3945	0	Ecology and Conservation Biology Distribution Requirement	4	COOP 3945	0
		EEMB Elective 2	4		
		Analytical Skills Requirement	4		
		Elective	4		
		0	16		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COOP 3945	0	EEMB Elective 3	4	Elective	4	COOP 3945	0
		EEMB Elective 4	4	Elective	4		
		Elective	4				
		Experiential Credit (Capstone/ Thesis)	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
COOP 3945	0	Elective	4
		Elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 131

Marine Biology, BS

Our Bachelor of Science in Marine Biology degree is designed to provide a strong foundation in marine biology and related disciplines. This major is offered through Northeastern University's Marine Science Center in Nahant.

A number of combined-major programs are offered; these can help focus a student's course choices along avenues that faculty feel are particularly appropriate.

Fieldwork is a valued component of training in our programs, and many of our courses use field sites throughout New England to demonstrate environmental processes or problems in their full complexity. In addition to sponsoring local trips, we have taken students on one longer field excursion each year to Iceland, the Cascade Mountains of Washington, the island of San Salvador in the Bahamas, or the Grand Canyon. Students also have the option to complete undergraduate research experiences with a faculty member. Undergraduate research projects can involve fieldwork and/or lab work completed under the guidance of faculty.

Many of our recent graduates work for environmental or geotechnical firms or continue their studies in graduate school. Students who participate in the co-op program typically work with local engineering or environmental consulting companies or with government agencies. These jobs often involve assessing building sites, evaluating land use, and studying problems concerned with groundwater contamination and remediation.

Three Seas Program

The Three Seas Program allows advanced undergraduate and beginning graduate students in biology and related areas to spend a year of field study in three diverse marine environments.

The program begins in the spring semester at Northeastern University's Marine Science Center in Nahant, 12 miles north of the main campus. Courses the following fall are conducted at the University of Washington's Friday Harbor Laboratories on San Juan Island, which is 70 miles north of Seattle and part of an archipelago that lies

between the mainland and Vancouver Island, and at the Smithsonian Tropical Research Institute in Bocas del Toro, Panama, where students engage in tropical biology research. For more information, contact Mark Patterson at 781.581.7370 (ext. 313), or visit the Three Seas Program website at www.northeastern.edu/threeseas (<http://www.northeastern.edu/threeseas>).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Marine Biology Major Requirements

Code	Title	Hours
Introduction to College		
ENVR 1000	Marine and Environmental Sciences at Northeastern	1
Required Biology		
Complete one of the following:		5
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1115 and BIOL 1116	General Biology 1 for Engineers and Lab for BIOL 1115	
Genetics		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
Organismal and Population Biology		
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	5
Introduction to Evolution		
EEMB 2400	Introduction to Evolution	4
Marine Biology		
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	5
Marine Biology Electives		
Complete four of the following:		16-20
BIOL 5587	Comparative Neurobiology	
EEMB 2290	Ecology and Evolution of Behavior	
EEMB 2420	Fisheries Biology, Policy, and Conservation	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 3120	Physical Biology of Marine Organisms	
EEMB 3450	Physiological Adaptations to the Environment	
EEMB 3460	Conservation Biology	
EEMB 3465	Ecological and Conservation Genomics	

EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130	
ENVR 1101	Environmental Science	
ENVR 2900	Special Topics in Environmental Studies	
ENVR 3125	Global Oceanic Change	
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
ENVR 4504	Environmental Pollution	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
<i>Three Seas Restricted Courses</i>		
EEMB 5504	Biology of Corals	
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	
EEMB 5512	Tropical Terrestrial Ecology	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5520	Coral Reef Ecology	
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	
EEMB 5528	Marine Conservation Biology	
EEMB 5532	Physiological and Molecular Marine Ecology	
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534	
EEMB 5536	Ocean and Coastal Sustainability	
EEMB 5589	Diving Research Methods	
<i>Marine Studies Consortium Courses (Unrestricted)</i>		
MARS 3210	Marine Mammals	
MARS 3430	Biology of Whales	
Experiential Learning		
An activity related to marine biology and approved by the experiential learning advisor must be completed before the capstone. Among the possibilities are co-op experience, junior/senior honors thesis, research project in a faculty lab, volunteer work in a biology-related area, participation in the Three Seas Program with submission of a project paper, or other approved experiences.		
Advanced Writing in the Disciplines		
ENGW 3307 or ENGW 3303 or ENGW 3315	Advanced Writing in the Sciences Advanced Writing in the Environmental Professions Interdisciplinary Advanced Writing in the Disciplines	4
Biology Capstone		
Complete one of the following:		1-4
BIOL 4701	Biology Capstone	
ENVR 4900	Earth and Environmental Science Capstone	
ENVR 4997	Senior Thesis	

Breadth Courses for Marine Biology

Code	Title	Hours
Mathematics		
MATH 1251	Calculus and Differential Equations for Biology 1	4
or MATH 1241	Calculus 1	
or MATH 1341	Calculus 1 for Science and Engineering	
Biostatistics		
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
General Chemistry 1		
CHEM 1101 and CHEM 1102 and CHEM 1103	General Chemistry for Health Sciences and Lab for CHEM 1101 and Recitation for CHEM 1101	5
or CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	
General Chemistry 2		
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
Organic Chemistry 1		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
Physics		
Complete a lecture/lab set for Physics 1 and for Physics 2:		10
<i>Physics 1</i>		
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145 (recommended)	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162 and PHYS 1163	Physics 1 and Lab for PHYS 1161 and Recitation for PHYS 1161	
PHYS 1171 and PHYS 1172 and PHYS 1173	Physics 1 for Bioscience and Bioengineering and Lab for PHYS 1171 and Interactive Learning Seminar for PHYS 1171	
<i>Physics 2</i>		
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147 (recommended)	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1165 and PHYS 1166 and PHYS 1167	Physics 2 and Lab for PHYS 1165 and Recitation for PHYS 1165	

Marine Biology Major Credit/GPA Requirements

Complete 74 semester hours in the major with a cumulative GPA of 2.000.

Due to overlap in course content, double majoring in biology and biochemistry or biology and behavioral neuroscience is not permitted.

Program Requirement

136 total semester hours required

Plan of Study**Four Years, Two Co-ops in Spring/Summer 1****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Elective	4	Elective	4
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4	Elective	4	Elective	4
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	Elective	4				
	15		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	Co-op	0	Co-op	0	Elective	4
EEMB 2302 and EEMB 2303	5					Elective	4
EEMB 2700 and EEMB 2701	5						
EESC 2000	1						
	16		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500 and ENVR 2501	5	Co-op	0	Co-op	0	PHYS 1147 and PHYS 1148	5
PHYS 1145 and PHYS 1146	5					Elective	4
Elective	4						
Marine biology elective	5						
	19		0		0		9

Year 4

Fall	Hours	Spring	Hours
CHEM 2311 and CHEM 2312	5	BIOL 4701, ENVR 4900, or ENVR 4997	1-4
ENGW 3303, 3307, or 3315	4	Elective	4
Marine biology elective	5	Elective	4

Marine biology elective	5	Marine biology elective	5
	19		14-17

Total Hours: 133-136

Four Years, Two Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Elective	4	PHYS 1147 and PHYS 1148	5
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4	Elective	4	Elective	4
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	PHYS 1145 and PHYS 1146	5				
	15		18		8		9

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EEMB 2302 and EEMB 2303	5	BIOL 2301 and BIOL 2302	5	Elective	4	Co-op	0
EEMB 2700 and EEMB 2701	5	EESC 2000	1	Elective	4		
Elective	4	ENVR 2500 and ENVR 2501	5				
Marine biology elective	5	Elective	4				
	19		15		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 2311 and CHEM 2312	5	Elective	4	Co-op	0
		ENGW 3303, 3307, or 3315	4	Elective	4		
		Marine biology elective	5				
		Marine biology elective	5				
	0		19		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	BIOL 4701, ENVR 4900, or ENVR 4997	1-4

Elective	4
Elective	4
Marine biology elective	5
0	14-17

Total Hours: 133-136

Marine Biology–Three Seas Program, Four Years, One Co-op in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	PHYS 1147 and PHYS 1148	5
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4			Elective	4
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	PHYS 1145 and PHYS 1146	5				
Elective	4						
	19		18		0		9

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	Co-op	0	Co-op	0	Vacation	0
EEMB 2302 and EEMB 2303	5						
EEMB 2700 and EEMB 2701	5						
EESC 2000	1						
	16		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	EEMB 5516 and EEMB 5517	5	Vacation	0	Vacation	0
ENVR 2500 and ENVR 2501	5	EEMB 5522 and EEMB 5523	5				
Elective	4	EEMB 5534 and EEMB 5535	5				
Elective	4	EEMB 5536	3				
		EEMB 5589	2				
	18		20		0		0

Year 4

Fall	Hours	Spring	Hours
EEMB 5504	3	BIOL 4701, ENVR 4900, or ENVR 4997	1-4
EEMB 5506	3	ENGW 3303, 3307, or 3315	4
EEMB 5508 and EEMB 5509	3	Elective	4
EEMB 5512	1	Elective	4
EEMB 5518	2		
EEMB 5520	2		
EEMB 5528	3		
EEMB 5532	3		
	20		13-16

Total Hours: 133-136

Marine Biology–Three Seas Program, Four Years, One Co-op in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	PHYS 1147 and PHYS 1148	5
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4			Elective	4
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	PHYS 1145 and PHYS 1146	5				
	15		18		0		9

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	CHEM 2311 and CHEM 2312	5	Vacation	0	Co-op	0
EEMB 2302 and EEMB 2303	5	EESC 2000	1				
EEMB 2700 and EEMB 2701	5	ENVR 2500 and ENVR 2501	5				
Elective	4	Elective	4				
		Elective	4				
	19		19		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EEMB 5516 and EEMB 5517	5	Vacation	0	Vacation	0

EEMB 5522 and EEMB 5523	5			
EEMB 5534 and EEMB 5535	5			
EEMB 5536	3			
EEMB 5589	2			
	0	20	0	0

Year 4

Fall	Hours	Spring	Hours
EEMB 5504	3	BIOL 4701, ENVR 4900, or ENVR 4997	1-4
EEMB 5506	3	ENGW 3303, 3307, or 3315	4
EEMB 5508 and EEMB 5509	3	Elective	4
EEMB 5512	1	Elective	4
EEMB 5518	2		
EEMB 5520	2		
EEMB 5528	3		
EEMB 5532	3		
	20		13-16

Total Hours: 133-136

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Vacation	0
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4				
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	Elective	4				
	15		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	Co-op	0	Co-op	0	Elective	4
EEMB 2700 and EEMB 2701	5					Elective	4
EEMB 2302 and EEMB 2303	5						
EESC 2000	1						
	16		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 2500 and ENVR 2501	5	Co-op	0	Co-op	0	PHYS 1147 and PHYS 1148	5
PHYS 1145 and PHYS 1146	5					Elective	4
Elective	4						
Elective	4						
	18		0		0		9

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	Co-op	0	Co-op	0	Vacation	0
Elective	4						
Elective	4						
Marine biology elective	5						
	18		0		0		0

Year 5

Fall	Hours	Spring	Hours
ENGW 3303, 3307, or 3315	4	BIOL 4701, ENVR 4900, or ENVR 4997	1-4
Elective	4	Elective	4
Marine biology elective	5	Elective	4
Marine biology elective	5	Marine biology elective	5
	18		14-17

Total Hours: 133-136

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	PHYS 1147 and PHYS 1148	5
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4			Elective	4
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	PHYS 1145 and PHYS 1146	5				
	15		18		0		9

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	ENVR 2500 and ENVR 2501	5	Vacation	0	Co-op	0
EEMB 2302 and EEMB 2303	5	EEMB 2700 and EEMB 2701	5				
EESC 2000	1	Elective	4				
Elective	4	Elective	4				
	15		18		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 2311 and CHEM 2312	5	Elective	4	Co-op	0
		Elective	4	Elective	4		
		Elective	4				
		Marine biology elective	5				
	0		18		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3303, 3307, or 3315	4	Vacation	0	Co-op	0
		Elective	4				
		Marine biology elective	5				
		Marine biology elective	5				
	0		18		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	BIOL 4701, ENVR 4900, or ENVR 4997	1-4				
		Elective	4				
		Elective	4				
		Marine biology elective	5				
	0		14-17				

Total Hours: 133-136

Marine Biology—Three Seas Program, Five Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Vacation	0

CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4				
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	PHYS 1145 and PHYS 1146	5				
	15		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	Co-op	0	Co-op	0	Vacation	0
EEMB 2302 and EEMB 2303	5						
EEMB 2700 and EEMB 2701	5						
EESC 2000	1						
	16		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	EEMB 5516 and EEMB 5517	5	Vacation	0	Vacation	0
ENVR 2500 and ENVR 2501	5	EEMB 5522 and EEMB 5523	5				
PHYS 1147 and PHYS 1148	5	EEMB 5534 and EEMB 5535	5				
		EEMB 5536	3				
		EEMB 5589	2				
	15		20		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EEMB 5504	3	Co-op	0	Co-op	0	Vacation	0
EEMB 5506	3						
EEMB 5508 and EEMB 5509	3						
EEMB 5512	1						
EEMB 5518	2						
EEMB 5520	2						
EEMB 5528	3						
EEMB 5532	3						
	20		0		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3303, 3307, or 3315	4	BIOL 4701, ENVR 4900, or ENVR 4997	1-4				
Elective	4	Elective	4				

Elective	4	Elective	4
Elective	4	Elective	4
	16		13-16

Total Hours: 133-136

Marine Biology—Three Seas Program, Five Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1107 and BIOL 1108	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Vacation	0
CHEM 1211 and CHEM 1212 and CHEM 1213	5	EEMB 2400	4				
ENVR 1000	1	ENGW 1111	4				
MATH 1251	4	Elective	4				
	15		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 2301 and BIOL 2302	5	EEMB 2700 and EEMB 2701	5	Vacation	0	Co-op	0
EEMB 2302 and EEMB 2303	5	ENVR 2500 and ENVR 2501	5				
PHYS 1145 and PHYS 1146	5	EESC 2000	1				
		PHYS 1147 and PHYS 1148	5				
	15		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EEMB 5516 and EEMB 5517	5	Vacation	0	Vacation	0
		EEMB 5522 and EEMB 5523	5				
		EEMB 5534 and EEMB 5535	5				
		EEMB 5536	3				
		EEMB 5589	2				
	0		20		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EEMB 5504	3	CHEM 2311 and CHEM 2312	5	Vacation	0	Co-op	0

EEMB 5506	3	ENGW 3303, 3307, or 3315	4
EEMB 5508 and EEMB 5509	3	Elective	4
EEMB 5512	1	Elective	4
EEMB 5518	2		
EEMB 5520	2		
EEMB 5528	3		
EEMB 5532	3		
	20		17
			0
			0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	BIOL 4701, ENVR 4900, or ENVR 4997	1-4
		Elective	4
		Elective	4
		Elective	4
	0		13-16

Total Hours: 133-136

Computer Science and Environmental Science, BS

The computer science and environmental science combined major focuses on geological processes that greatly impact the earth, atmosphere, and water in oceans, lakes, and rivers. Understanding these processes requires acquisition and computational analysis of large amounts of data—underscoring the natural relationship between computer science and environmental science.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Environmental Science Courses

Code	Title	Hours
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Environmental Science Required Courses

ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4
ENVR 4900 or ENVR 4997	Earth and Environmental Science Capstone Senior Thesis	1

Complete one of the following sequences: 5

ENVR 1202
and ENVR 1203 History of Earth and Life
and Interpreting Earth History

ENVR 2310
and ENVR 2311 Earth Materials
and Lab for ENVR 2310

Environmental Science Integrative Courses

Complete at least two of the following: 8-10

ENVR 3300
and ENVR 3301 Geographic Information Systems
and Lab for ENVR 3300

ENVR 3418 Geophysics

ENVR 4500
and ENVR 4501 Applied Hydrogeology
and Lab for ENVR 4500

Environmental Science Electives

If you complete more than two environmental science integrative courses (above), they will count as environmental science electives.

Complete four of the following: 16-20

ENVR 1101 Environmental Science

ENVR 2340
and ENVR 2341 Earth Landforms and Processes
and Lab for ENVR 2340

ENVR 4504 Environmental Pollution

ENVR 4563	Advanced Spatial Analysis	
ENVR 5190	Soil Science	
ENVR 5201	Geologic Field Seminar	
ENVR 5230 and ENVR 5231	Structural Geology and Lab for ENVR 5230	
ENVR 5240 and ENVR 5241	Sedimentary Basin Analysis and Lab for ENVR 5240	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
ENVR 5270 and ENVR 5271	Glacial and Quaternary History and Lab for ENVR 5270	

Supporting Courses

Code	Title	Hours
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Calculus

MATH 1251 or MATH 1341	Calculus and Differential Equations for Biology 1 Calculus 1 for Science and Engineering	4
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MATH 1252 or MATH 1342	Calculus and Differential Equations for Biology 2 Calculus 2 for Science and Engineering	4
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MATH 3081	Probability and Statistics	4
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Chemistry

CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
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CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
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Computing and Social Issues

Complete one of the following: 4

ANTH 3418 Wired/Unwired: Cybercultures and
Technopolitics

IA 5240 Cyberlaw: Privacy, Ethics, and Digital
Rights

INSH 2102 Bostonography: The City through Data,
Texts, Maps, and Networks

PHIL 1145 Technology and Human Values

SOCL 1280 The 21st-Century Workplace

SOCL 3485 Environment, Technology, and Society

SOCL 4528 Computers and Society

Computer Science English Requirement

Code	Title	Hours
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College Writing

ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
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Advanced Writing in the Disciplines

Complete one course from the following: 4

ENGW 3302 Advanced Writing in the Technical
Professions

ENGW 3315 Interdisciplinary Advanced Writing in
the Disciplines

Required General Electives

Code	Title	Hours
	Complete six general electives.	24

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

138 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	ENVR 1202 or 2310	4	Elective	4		
CS 2500 and CS 2501	5	ENVR 1203 or 2311	1				
ENVR 1200 (ENVR 1201 (Lab if offered))	4	CS 3200	4				
ENGW 1111	4	Elective	4				
	19		18		8		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 5210 or 5250	4	CHEM 1214 and CHEM 1215 and CHEM 1216	5	MATH 1252 or 1342	4	Co-op	0
CHEM 1211 and CHEM 1212 and CHEM 1213	5	MATH 1251 or 1341	4	Elective	4		
CS 3000	4	ENVR elective	4				
Elective	4	CS elective	4				
		CS 1210	1				
	17		18		8		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	MATH 3081	4	Co-op	0
		ENVR elective	4	ENGW 3302	4		
		ENVR elective	4				
		ENVR integrative (take lab if offered)	4				
		THTR 1170	1				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500 and CS 4501	4	Elective	4		
		ENVR 4900 (or ENVR 4997 (if short of credit hours))	1	Elective	4		
		ENVR integrative	4				
		ENVR elective	4				
		Computing and social issues	4				
	0		17		8		0

Total Hours: 138

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	Elective	4				
ENVR 1200 (ENVR 1201 if offered)	4	ENVR 1202 or 2310	4				
ENGW 1111	4	ENVR 1203 or 2311	1				
	19		18		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Co-op	0

CHEM 1211 and CHEM 1212 and CHEM 1213	5 CS 3000	4		
ENVR 5210 or 5250	4 ENVR elective	4		
Elective	4 CS 1210	1		
	CS elective	4		
	17	18	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 1251 or 1341	4	MATH 3081	4	Co-op	0
		ENVR integrative (take lab if offered)	4	Elective	4		
		ENVR elective	4				
		THTR 1170	1				
		Elective	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	Elective	4	Co-op	0
		MATH 1252 or 1342	4	Elective	4		
		ENGW 3302	4				
		ENVR integrative	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		CS 4500 and CS 4501	4
		ENVR 4900 (ENVR 4997 (if short of credit hours))	1
		ENVR elective	4
		ENVR elective	4
		Computing and social issues	4
	0		17

Total Hours: 138

Environmental Geology and Chemistry, BS**Jonathan Grabowski, PhD**

Associate Professor

Marine Science Center, Nahant

781.581.370 x337

Michael P. Pollastri, PhD

Professor and Chair

102 Hurtig Hall

617.373.2822

Danielle Lynch, Undergraduate Administrative Officer,

dw.lynch@neu.edu, 617.373.3176

The Departments of Marine and Environmental Sciences and Chemistry provide education in basic environmental science and chemistry-related disciplines. The overall objective of this combined major is to provide the fundamental scientific background and practical training for students as they prepare for environmental and chemically related careers or advanced study in fields including the traditional specialties such as toxicology, pollution, bio-remediation, environmental protection, education, law, and other endeavors that may draw upon an understanding of the chemical basis of the environment and the changes that will likely result from global warming.

Key general objectives are the development of qualitative and quantitative problem-solving skills and effective communication skills. Specific learning objectives for this combined major include the development of conceptual understanding and problem-solving abilities in the fundamental dynamics between the environment and its chemistry, be it analytical chemistry, biochemistry, inorganic chemistry, organic chemistry, and physical chemistry. Students will perform quantitative measurements; learn proper laboratory practices, including safety; develop proficiency with modern instruments and computers for data acquisition and analysis; and learn the relevance of chemistry within the context of the abiotic and biotic environments.

Most of our combined majors will participate in the cooperative education program and thereby gain invaluable professional experience to augment their classroom and laboratory work. Not only does that experience add immensely to the overall education received, it also has the potential to provide contacts and references for later employment or graduate school admissions. Students in this major may also undertake research projects for at least one semester under the supervision of a faculty member. Sufficient electives are available in the program either to take more advanced courses or research within the department or to add courses in an area of special interest.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Environmental Geology Major Requirements

Code	Title	Hours
Earth Foundations		
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5

ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	5
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Geomorphology

ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	5
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Environmental Geology Intermediate/Advanced Electives

Complete two intermediate or advanced electives from ENVR 2300 to ENVR 5999.		8-10
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Supporting Courses for Environmental Geology

Code	Title	Hours
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Mathematics

MATH 1241	Calculus 1	4
MATH 1242	Calculus 2	4

Science Requirement

Complete one of the following options: 10

Biology Option

BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	

Physics Option

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	

Chemistry Major Requirements

Code	Title	Hours
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General Chemistry

CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	5

Intermediate-Level Chemistry

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5
CHEM 2331 and CHEM 2332	Bioanalytical Chemistry and Lab for CHEM 2331	5
CHEM 3403 and CHEM 3404	Quantum Chemistry and Spectroscopy and Lab for CHEM 3403	5
CHEM 3431 and CHEM 3432	Physical Chemistry and Lab for CHEM 3431	5

Advanced-Level Chemistry

CHEM 3521 and CHEM 3522	Instrumental Methods of Analysis and Instrumental Methods of Analysis Lab	5
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Environmental Geology/Chemistry Integrative Requirement

Code	Title	Hours
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Choose two courses from the following:

ENVR 3410	Environmental Geochemistry	
ENVR 5190	Soil Science	

Environmental Geology/Chemistry Major Credit Requirement

Complete 94 semester hours in the major.

Program Requirement

128 total semester hours required.

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1211 and CHEM 1212 and CHEM 1213	5	CHEM 1214 and CHEM 1215 and CHEM 1216	5	Vacation	0	Vacation	0
ENGV 1111	4	ENVR 1202 and ENVR 1203	5				
ENVR 1200 and ENVR 1201	5	MATH 1242	4				
MATH 1241	4	Elective	4				
	18		18		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311 and CHEM 2312	5	CHEM 2313 and CHEM 2314	5	Vacation	0	Co-op	0
ENVR 2310 and ENVR 2311	5	EESC 2000	1				
Physics 1 or Biology 1	5	GEOL intermediate/ advanced undergraduate elective	4				
		Physics 2 or Biology 2	5				
	15		15		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 2331 and CHEM 2332	5	Elective	4	Co-op	0
		ENVR 2340 and ENVR 2341	5	Elective	4		
		Elective	4				
		Integrative course	5				
	0		19		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHEM 3431	4	CHEM 3521 and CHEM 3522	5	Co-op	0
		CHEM 3432	1	Elective	4		
		Elective	4				

GEOL intermediate/advanced undergraduate elective	4			
Integrative course	4			
	0	17	9	0

Year 5

Fall	Hours	Spring	Hours
Co-op		ENGW 3303, 3307, or 3315	4
		CHEM 3403	4
		CHEM 3404	1
		Elective	4
		Elective	4
	0	17	

Total Hours: 136

Environmental Studies and Economics, BS

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, political, and economic aspects of the world's environmental problems and potential solutions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Introduction to College

Code	Title	Hours
ECON 1000	Economics at Northeastern	1
or ENVR 1000	Marine and Environmental Sciences at Northeastern	

Economics Requirements

Code	Title	Hours
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4
Required Economics Courses		

A minimum GPA of 2.000 is required:

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
ECON 3423	Environmental Economics	4

Economics Electives

No more than one course may be at the introductory level (course number 1000–1999).

Complete two of the following: 7-8

ECON 1290	History of the Global Economy
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ECON 3420	Urban Economic Issues
ECON 3422	Economics of Transportation
ECON 3424	Law and Economics
ECON 3425	Energy Economics
ECON 3440	Public Finance
ECON 4635	International Economics
PPUA 5260	Ecological Economics

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
PHIL 1180	Environmental Ethics	4
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
POLS 2395	Environmental Politics and Policy	4
SOCL 1246	Environment and Society	4
Science Component		
ENVR 1101	Environmental Science	4
ENVR 1112 or ENVR 1200	Environmental Geology Dynamic Earth	4
ENVR 1445		4
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5

GPA Requirement

Students are required to earn a GPA of 2.000 in either PHIL 1180 or PHIL 3480 and in ENVR 1101.

Environmental Science Elective

Complete one environmental science elective in consultation with the environmental studies head advisor.

Integrative Requirements

Code	Title	Hours
Advanced Writing in the Disciplines		
ENGW 3308	Advanced Writing in the Social Sciences	4

Integrative Course

Note: Your integrative course and your capstone course (below) must be from different departments.

Complete one of the following:	4
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ECON 4692	Senior Economics Seminar	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

Capstone

Note: Your integrative course (above) and your capstone course must be from different departments.

ECON 4692	Senior Economics Seminar	4
or ENVR 4997	Senior Thesis	
or ENVS 4997	Senior Thesis	

Experiential Learning Requirement

Code	Title	Hours
Complete one of the following:		
COOP 3945	Co-op Work Experience	4
ECON 4992	Directed Study	
ENVR 4992	Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ENVR 4970	Junior/Senior Honors Project 1	

Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Information Science and Environmental Science, BS

The information science and environmental science combined major provides a foundational study of geological processes before focusing on environmental planning, environmental ethics, and sustainability. Since it examines the relationship between human decisions and actions to the environment, the program aligns with the orientation of information science, which utilizes an integrated, people-centered curriculum combining concepts and skills from computer science, behavioral and social science, and system design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Information Science Required Courses

IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4800	Empirical Research Methods (Integrative course)	4

Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Environmental Science Courses

Code	Title	Hours
Required Environmental Science Courses		
ENVR 1101	Environmental Science	4
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 5210 or ENVR 5250	Environmental Planning and Geology and Land-Use Planning	4
ENVR 4900 or ENVR 4997	Earth and Environmental Science Capstone and Senior Thesis	1

Sustainability Focus Courses

PHIL 1180	Environmental Ethics	4
Complete two of the following:		
ECON 3423	Environmental Economics	
ENVR 4515	Sustainable Development	
ENVR 5202	Environmental Science Field Seminar Abroad	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
SOCL 1246	Environment and Society	

Environmental Science Electives

Complete three of the following:		
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	12
ENVR 3418	Geophysics	
ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	

ENVR 4504	Environmental Pollution
ENVR 5201	Geologic Field Seminar
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242

Integrative Course

Code	Title	Hours
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5

Supporting Courses

Code	Title	Hours
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Mathematics and Statistics

ECON 2350	Statistics	4
MATH 1251	Calculus and Differential Equations for Biology 1	4
or MATH 1341	Calculus 1 for Science and Engineering	

Chemistry

Complete one of the following:		
CHEM 1211 and CHEM 1212 and CHEM 1213	General Chemistry 1 and Lab for CHEM 1211 and Recitation for CHEM 1211	5
CHEM 1151 and CHEM 1152 and CHEM 1153	General Chemistry for Engineers and Lab for CHEM 1151 and Recitation for CHEM 1151	

Economics

ECON 1116	Principles of Microeconomics	4
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Computing and Social Issues

Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete five general electives.		20

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Exploring Creative Expression and Innovation
- Understanding Societies and Institutions
- Analyzing and Using Data
- Employing Ethical Reasoning
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

136 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	IS 2000	4	Vacation
CS 1800 and CS 1802	5	ENVR 1200 (ENVR 1201 (Lab if Offered))	4	Elective	4	
CS 2500 and CS 2501	5	CS 3200	4			
ENVR 1101	4	ECON 1116	4			
ENGW 1111	4					
		19			17	8
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	IS 3500	4	Elective	4	Co-op
PHIL 1180	4	CS elective	4	CS 3000	4	
ENVR elective	4	ENVR 3300 and ENVR 3301	5			
CHEM 1211 and CHEM 1212 and CHEM 1213	5	ECON 2350	4			
		CS 1210	1			
		17			18	8
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		IS 4800	4	Elective	4	Co-op
		ENVR elective	4	MATH 1251 or 1341	4	
		ENVR sustainability	4			

	ENVR 5210 or 5250	4			
		0	16	8	0
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		ENVR 4900 (ENVR 4997 (if short of credit hours))	1	Elective	4
		Computing and social issues	4	ENGW 3302	4
		ENVR elective	4		
		Elective	4		
		ENVR sustainability	4		
			0	17	8

Total Hours: 136

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	ENVR 1200 (ENVR 1201 (Lab if offered))	4				
ENGW 1111	4	ECON 1116	4				
ENVR 1101	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	ENVR 3300 and ENVR 3301	5	Elective	4	Co-op	0
CS 3500	4	CS 3000	4	Elective	4		
CHEM 1211 and CHEM 1212 and CHEM 1213	5	ECON 2350	4				
ENVR elective	4	PHIL 1180	4				
		CS 1210	1				
	17		18		8		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 3500	4	Elective	4	Co-op	0
		CS elective	4	ENGW 3302	4		
		MATH 1251 or 1341	4				

	ENVR elective	4					
		0	16	8	0		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Vacation	0	Co-op	
		ENVR elective	4				
		ENVR sustainability	4				
		Elective	4				
			0	16	0		0

Year 5						
Fall	Hours	Spring	Hours			
Co-op		ENVR 4900 (or ENVR 4997 (if short of credit hours))	1			
		ENVR sustainability	4			
		ENVR 5210 or 5250	4			
		Elective	4			
		Computing and social issues	4			
			0	17		

Total Hours: 136

Environmental Geology, Minor

The environmental geology minor provides an understanding of earth surface processes, such as rivers and flooding, groundwater and water supply, landform development, coastline evolution, and geological hazards. The impacts of man on the environment and various means of managing these impacts are among the central themes. The environmental geology program places strong emphasis on field studies.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	5
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4

Geology Elective

Code	Title	Hours
Complete one ENVR course.		4

GPA Requirement

2.000 GPA required in the minor

Environmental Science, Minor

The environmental science minor provides undergraduates with a strong foundation on a variety of scientific, technical, institutional, economic, behavioral, and conservation-oriented solutions to environmental problems caused by either natural phenomena and/or human activity.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Course Work

Code	Title	Hours
Introductory Course Work		
Complete one of the following:		4-5
BIOL 1121 and BIOL 1122	Basic Microbiology and Lab for BIOL 1121	
ENVR 1101	Environmental Science	

Science or Engineering

Complete one of the following courses based on your major: 4-5

Engineering Majors

CHEM 1214 and CHEM 1215	General Chemistry 2 and Lab for CHEM 1214	
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Other Majors

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	
CIVE 2334	Environmental Engineering 1	

Social Sciences

Complete one of the following: 4

ECON 3423	Environmental Economics	
PHIL 1180	Environmental Ethics	
POLS 2395	Environmental Politics and Policy	
SOCL 1246	Environment and Society	
SOCL 3485	Environment, Technology, and Society	

Electives

Code	Title	Hours
Complete any two courses from the following. Only one of the courses may be in the 1000–1999 range. Only one course may be selected from a group:		8-10

Physics Group

For nonengineering/nonscience majors only:

PHYS 1132	Energy, Environment, and Society	
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Biology Group

EEMB 2302	Ecology	
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Environmental Planning Group

ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

Geology Group

ENVR 2340 and ENVR 2341	Earth Landforms and Processes and Lab for ENVR 2340	
ENVR 4504	Environmental Pollution	
ENVR 5190	Soil Science	

Hydrogeology Group

ENVR 4500 and ENVR 4501	Applied Hydrogeology and Lab for ENVR 4500	
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Geographic Information Systems Group

ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
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Civil Engineering Group

CIVE 4534	Environmental Engineering 2	
CIVE 5536	Hydrologic Engineering	

Interdisciplinary Work

Code	Title	Hours
Complete the independent project, the applied experience, or the environmental safety program:		

Independent Project

See program advisor for approval before embarking on the project.

Applied Experience

See program advisor for details.

Environmental Safety Program

See program advisor for details.

GPA Requirement

2.000 GPA required in the minor

Environmental Studies, Minor

Students may choose to pursue a minor in environmental studies by completing a blend of science, social science, and interdisciplinary courses. A student may broaden his or her understanding of the science and policy of the Earth's environmental challenges through this program, which is designed to complement any undergraduate major.

The goals of the environmental studies minor are threefold,

- To help undergraduates develop an awareness of the scientific, cultural, and political aspects of the world's environmental problems
- To better prepare students for careers in the expanding field of environmental professions
- To prepare students for further study at the graduate or professional school level

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
ENVR 1101	Environmental Science	4

Science Course

Code	Title	Hours
Complete one of the following:		4-5
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	
ENVR 1112	Environmental Geology	
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	

Social Science Courses

Code	Title	Hours
Complete two of the following:		8
ECON 1116	Principles of Microeconomics	
PHIL 1180	Environmental Ethics	
POLS 1150	American Government	
SOCL 1246	Environment and Society	

Interdisciplinary Courses

Code	Title	Hours
Complete two of the following:		8
ENVR 4504	Environmental Pollution	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
POLS 2395	Environmental Politics and Policy	

GPA Requirement

2.000 GPA required in the minor

Geology, Minor

The geology minor focuses on the history and development of the earth. The program places a strong emphasis on field studies as a means of appreciating the materials, landforms, and forces interacting throughout geological time.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
ENVR 1200 and ENVR 1201	Dynamic Earth and Lab for ENVR 1200	5
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5
ENVR 2310 and ENVR 2311	Earth Materials and Lab for ENVR 2310	5
ENVR 3000 and ENVR 3001	and	5

Geology Elective

Code	Title	Hours
Complete one ENVR course.		4

GPA Requirement

2.000 GPA required in the minor

Marine Biology, Minor

The marine biology minor is designed to provide Northeastern undergraduates with a strong foundation in marine biology and related disciplines. The minor has a strong hands-on component involving course work, marine biology research projects, and marine-related co-ops.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Restrictions

This minor is not available for students who major in biology or any combined major that involves biology. Biology majors interested in marine biology should consider the major in marine biology.

Required Courses

Code	Title	Hours
BIOL 1111 and BIOL 1112 or BIOL 1107 and BIOL 1108	General Biology 1 and Lab for BIOL 1111 Foundations of Biology and Lab for BIOL 1107	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5

Elective Courses

Code	Title	Hours
Complete three of the following:		7-15
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	
EEMB 5504	Biology of Corals	
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	
EEMB 5512	Tropical Terrestrial Ecology	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5520	Coral Reef Ecology	
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	
EEMB 5528	Marine Conservation Biology	
EEMB 5532	Physiological and Molecular Marine Ecology	
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534	
EEMB 5536	Ocean and Coastal Sustainability	
EEMB 5589	Diving Research Methods	

Supporting Courses

Code	Title	Hours
To provide breadth of knowledge, complete one additional science course in the BIOL, CHEM, ENVR, or PHYS subject areas or from the following:		4

PSYC 3458	Biological Psychology
PSYC 4510	Psychopharmacology

GPA Requirement

2.000 GPA required in the minor

Marine Studies, Minor

The marine studies minor is designed to provide a structured program on the Boston campus for students with an interest in the marine environment. The program allows a primary, but not exclusive, emphasis in either the scientific or the social science/humanistic study of the oceans. Some physical interaction with the sea through achievement in a specific marine-related skill and a project involving a degree of independent study is required. Students enrolled in any program at the university may complete the marine studies minor.

The program draws on courses throughout the university and is affiliated with several outstanding, specialized marine programs. These include the SEA Semester Program run by the Sea Education Association, which provides a rigorous program in marine sciences at Woods Hole, Massachusetts, and aboard one of its tall ships for training cruises in the Caribbean, Pacific, or Labrador Sea. In addition to the cruises designed to explore the broad range of aspects of marine science and culture, there are specialized cruises that add a focus on Caribbean studies, Pacific island culture, and marine environmental issues. Students may also take specialized courses in marine topics through the Marine Studies Consortium.

For more information, contact the director of marine studies, Professor Rebeca Rosengaus at 617.373.7032 or at r.rosengaus@northeastern.edu.

COURSE REQUIREMENTS

At least four marine-related courses totaling 16 semester hours are required, along with mastery of a marine skill and an independent study. Two courses must be beyond the introductory level. At least one course must be from the natural sciences and one from the social sciences/humanities. Other courses at the university may fulfill these requirements with the permission of the department.

Mastery of a marine-related skill can be achieved through satisfactory completion of course work or evidence of achievement through some form of approved outside certification. Course work in marine skills normally is limited to one of the six required courses.

The project requirement can be met by completion of an approved directed studies course in marine studies or in any department of the university. The project normally is limited to one of the six required courses. The project requirement can also be met, with prior approval, by completion of a major course-related project or other outside project in which a significant amount of independent study is involved.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
	Complete four courses from the following lists. Two courses must be above the introductory level.	16

Humanities

MARS 3310	Water Resources Policy and Management
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Sciences

EEMB 1450	Introduction to Marine Biology
EEMB 2616	Invertebrate Zoology
EEMB 5504	Biology of Corals
EEMB 5506	Biology and Ecology of Fishes
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508
EEMB 5512	Tropical Terrestrial Ecology
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516
EEMB 5518	Ocean and Coastal Processes
EEMB 5520	Coral Reef Ecology
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522
EEMB 5528	Marine Conservation Biology
EEMB 5532	Physiological and Molecular Marine Ecology
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534
EEMB 5536	Ocean and Coastal Sustainability
EEMB 5589	Diving Research Methods
ENVR 1120	Oceans and Coasts
ENVR 5210	Environmental Planning
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242
MARS 3210	Marine Mammals
MARS 3325	Coastal Zone Management
MARS 3430	Biology of Whales

Marine-Related Skill

Code	Title	Hours
Complete one of the following:		3
ENVR 3101	Certification in a skill such as scuba, by a Merchant Marine license, or by a comparable level of achievement determined by the marine studies advisor.	

Marine-Related Independent Study

Code	Title	Hours
	This requirement may be satisfied by producing a research project on a marine-related topic, either as part of another course or independently. Acceptance of the project is at the discretion of the marine studies advisor.	4

GPA Requirement

2.000 GPA required in the minor

Mathematics

Website (<https://cos.northeastern.edu/mathematics>)

Alexandru Suci, PhD
Professor and Chair

567 Lake Hall

617.373.2450

617.373.5658 (fax)

Solomon M. Jekel, Associate Professor and Head Advisor,
s.jekel@northeastern.edu

Mathematics is of ever-increasing importance to our society and everyday life. It has long been the language of science and technology and provides a rich source of methods for analyzing and solving problems encountered in the physical world. Today, mathematics is essential in virtually all fields of human endeavor, including business, the arts, and the social sciences.

The Bachelor of Arts degree requires at least 11 mathematics courses and two physics courses, in addition to the study of a foreign language; this program is appropriate for students who wish a broader liberal arts education. The Bachelor of Science degree requires at least 14 mathematics courses and two physics courses but no foreign language study; it is more specialized, and it is recommended for those strongly interested in mathematics and science. The department also offers a minor degree in mathematics.

The major programs provide flexibility with elective courses. Students may take advantage of a range of interdisciplinary programs and may join a major in mathematics with one in such fields as computer science, physics, and biology.

Exceptional students are accepted into the Honors Program and have the option to enroll in honors sections of several of their mathematics courses. All math majors may benefit from co-op opportunities in the scientific and business communities in Boston and elsewhere.

Many of the mathematics courses that we offer use computers for visualization, modeling, and numerical approximation.

Students planning to teach secondary-school mathematics must major in mathematics and take a specific minor in education, which includes course work and student teaching.

Mathematical training may lead to opportunities in applied research (natural sciences, engineering, economics, management, computer science) as well as in mathematical research, teaching, or industry.

Programs

Bachelor of Arts (BA)

- Mathematics (p. 556)

Bachelor of Science (BS)

- Mathematics (p. 558)
- Biology and Mathematics (p. 490)
- Computer Science and Mathematics (p. 330)
- Economics and Mathematics (p. 563)
- Graphic and Information Design and Mathematics (p. 95)
- Mathematics and Business Administration (p. 253)
- Mathematics and Physics (p. 568)
- Mathematics and Political Science (p. 569)

Minor

- Mathematics (p. 571)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Mathematics, BA

The Bachelor of Arts degree requires at least 11 mathematics courses and two physics courses, in addition to the study of a foreign language. This program is appropriate for students who wish a broader liberal arts education.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Major Grade Requirement

A grade of C or higher is required in all mathematics courses numbered 3000 and below and in MATH 4000.

Mathematics Major Requirements

Code	Title	Hours
Problem Solving		
MATH 1365	Introduction to Mathematical Reasoning	4
History of Mathematics		
MATH 2201	History of Mathematics	4
Calculus		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Mathematics		
MATH 2331	Linear Algebra	4
MATH 3150	Real Analysis	4
	or MATH 4565	Topology
MATH 3175	Group Theory	4
MATH 3560	Geometry	4
	or MATH 3527	Number Theory 1
Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1
Mathematics Elective		
Complete one course in the following range:		4
MATH 3001 to MATH 4899		
Required Physics		
<i>Physics 1</i>		
Complete one of the following:		5

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151

Physics 2

Complete one of the following: 5

PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155

Capstone

Complete one of the following: 4

MATH 4025	Applied Mathematics Capstone
MATH 5131	Introduction to Mathematical Methods and Modeling
MATH 4020	Research Capstone

Mathematics Major Credit Requirement

Complete 54 semester hours in the major.

Upper-Division Electives

Note: Courses used as upper-division electives do not count toward the major or NUpath.

Code	Title	Hours
Complete three general electives numbered 3000 or above.		12

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341	4	MATH 1342	4	Vacation	0	Vacation	0
MATH 1365	4	PHYS 1165	4				
Elective	4	PHYS 1166	1				
PHYS 1161	4	Elective	4				
PHYS 1162	1	ENGW 1111	4				
MATH 1000	1						
		18		17		0	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	MATH 2201	4	Vacation	0	Co-op	0
MATH 2331	4	Elective	4				
Elective	4	Elective	4				
Foreign language core course	4	Foreign language core course	4				
		EESC 2000	1				
		16		17		0	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 3560 or 3527	4	MATH elective	4	Co-op	0
		ENGW 3315	4	Elective	4		
		Foreign language core course	4				
		Elective	4				
		MATH 3000	1				
		0		17		8	0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 3150	4	Upper-division elective	4	Co-op	0
		Elective	4	Upper-division elective	4		
		Elective	4				
		Upper-division elective	4				
		MATH 4000	1				
		0		17		8	0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	MATH 3175	4
		MATH elective	4
		MATH 4025	4
		Elective	4
		0	16

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1161	4	MATH 1342	4	Vacation	0	Vacation	0
PHYS 1162	1	PHYS 1165	4				
MATH 1365	4	PHYS 1166	1				
MATH 1341	4	ENGW 1111	4				
MATH 1000	1	Elective	4				
Elective	4						
		18		17		0	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	Co-op	0	Co-op	0	Vacation	0
MATH 2331	4						
Elective	4						
Foreign language core course	4						
EESC 2000	1						
		17		0		0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2201	4	Co-op	0	Co-op	0	MATH elective	4
Elective	4					Elective	4
Elective	4						
Foreign language core course	4						
MATH 3000	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Elective	4
MATH 3560 or 3527	4					Elective	4
MATH 4000	1						
Foreign language core course	4						
Elective	4						
	17		0		0		8

Year 5

Fall	Hours	Spring	Hours
MATH 3150	4	MATH 3175	4
MATH elective	4	MATH 4025	4
Elective	4	Upper-division elective	4
Upper-division elective	4	Upper-division elective	4
	16		16

Total Hours: 134

Mathematics, BS

The Bachelor of Science degree requires 14 mathematics courses and 2 physics courses. It is the degree most commonly pursued by math majors and is the one recommended for those strongly interested in mathematics and science.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Major Grade Requirement

A grade of C or higher is required in all mathematics courses numbered 3000 and below and in MATH 4000.

Mathematics Major Requirements

Code	Title	Hours
Problem Solving		
MATH 1365	Introduction to Mathematical Reasoning	4
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Mathematics		
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
MATH 3150	Real Analysis	4
MATH 3175	Group Theory	4
Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1
Mathematics Electives		
Complete four courses in the following range:		16
MATH 3101 to MATH 4899		
Required Physics		
<i>Physics 1</i>		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Capstone		
Complete one of the following:		4
MATH 4025	Applied Mathematics Capstone	
MATH 5131	Introduction to Mathematical Methods and Modeling	
MATH 4020	Research Capstone	

Mathematics Major Credit Requirement

Complete 66 semester hours in the major.

Upper-Division Electives

Note: Courses used as upper-division electives do not count toward the major or NUPath.

Code	Title	Hours
	Complete three general electives numbered 3000 or above.	12

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MATH 1341	4	MATH 1342	4	Vacation	0	Vacation
MATH 1365	4	PHYS 1165	4			
Elective	4	PHYS 1166	1			
PHYS 1161	4	ENGW 1111	4			
PHYS 1162	1	Elective	4			
MATH 1000	1					
		18		17		0
						0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MATH 2321	4	MATH 2341	4	Vacation	0	Co-op
MATH 2331	4	Elective	4			
Elective	4	Elective	4			
Elective	4	Elective	4			
		EESC 2000	1			
		16		17		0
						0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	MATH elective	4	MATH elective	4	Co-op
		ENGW 3315	4	Elective	4	
		MATH 3081	4			
		Upper-division elective	4			
		MATH 3000	1			
		0		17		8
						0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	MATH 3150	4	MATH elective	4	Co-op
		MATH elective	4	Elective	4	
		Elective	4			
		Upper-division elective	4			
		MATH 4000	1			
		0		17		8
						0
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	MATH 3175	4			

MATH elective	4
MATH 4025	4
Upper-division elective	4
<hr/>	
0	16

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 1161	4	MATH 1342	4	Vacation	0	Vacation
PHYS 1162	1	PHYS 1165	4			
MATH 1365	4	PHYS 1166	1			
MATH 1341	4	ENGW 1111	4			
MATH 1000	1	Elective	4			
Elective	4					
		18		17		0
						0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MATH 2321	4	Co-op	0	Co-op	0	Vacation
MATH 2331	4					
Elective	4					
Elective	4					
EESC 2000	1					
		17		0		0
						0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
MATH 2341	4	Co-op	0	Co-op	0	MATH elective
MATH 3175	4					Elective
Elective	4					
Elective	4					
MATH 3000	1					
		17		0		8
						0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ENGW 3315	4	Co-op	0	Co-op	0	MATH elective
MATH 3081	4					Elective
MATH 4000	1					
MATH 3150	4					
Upper-division elective	4					
		17		0		8
						0
Year 5						
Fall	Hours	Spring	Hours			
MATH elective	4	Elective	4			
MATH elective	4	MATH 4025	4			

Upper-division elective	4	Upper-division elective	4
Elective	4	MATH elective	4
16		16	

Total Hours: 134

Biology and Mathematics, BS

In the BS, combined biology and mathematics degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In mathematics courses, students pursue mathematical reasoning, differential equations, and linear algebra, as well as statistics and probability. The fields of biology and mathematics are integrated in a range of course offerings including bioinformatics, applied statistics, advanced genomics, and biological imaging.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000 or MATH 1000	Biology at Northeastern Mathematics at Northeastern	1
Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
<i>Project Lab</i>		
BIOL 2309	Biology Project Lab	4
Chemistry		
<i>General Chemistry</i>		
CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5

Organic Chemistry

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Biochemistry

BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
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Organismal and Population Biology Elective

Complete one of the following: 4-5

BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Mathematics Requirements

Code	Title	Hours
Calculus 1		
MATH 1341 or MATH 1251	Calculus 1 for Science and Engineering Calculus and Differential Equations for Biology 1	4

Calculus 2 and Calculus 3

MATH 1342 or MATH 1252	Calculus 2 for Science and Engineering Calculus and Differential Equations for Biology 2	4
MATH 2321	Calculus 3 for Science and Engineering	4

Physics

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
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Required Mathematics Courses

MATH 1365	Introduction to Mathematical Reasoning	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4

Mathematics Electives

Complete three of the following:		12
MATH 2331	Linear Algebra	
MATH 3001 to MATH 4899		

Additional Requirements

Code	Title	Hours
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1

Capstone

Complete one of the following:		4
BIOL 4701	Biology Capstone	
MATH 4020	Research Capstone	
MATH 4025	Applied Mathematics Capstone	

MATH 5131 Introduction to Mathematical Methods and Modeling

Biology/Mathematics Integrative Courses

Complete two of the following: 8-10

CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510
BIOL 3405	Neurobiology
BIOL 5569	Advanced Microbiology
BIOL 5581	Biological Imaging
BIOL 5591	Advanced Genomics
MATH 4581	Statistics and Stochastic Processes
MATH 7343	Applied Statistics
BINF 6308	Bioinformatics Computational Methods 1
BINF 6309	Bioinformatics Computational Methods 2

Intermediate or Advanced Science

Complete one course from the following: 4

BIOL 2301 to BIOL 5999
CHEM 2311 to CHEM 5999
EEMB 2290 to EEMB 5999
ENVR 2310 to ENVR 5999
MATH 2280 to MATH 5999
PHYS 2303 to PHYS 5999
PSYC 2290 to PSYC 5999

Writing Requirement

ENGW 3307 Advanced Writing in the Sciences 4

Biology and Mathematics Combined-Major Credit/GPA Requirements

Complete 93 semester hours in the major with a cumulative GPA of 2.000.

Program Requirements

143 total semester hours required

Computer Science and Mathematics, BS

The computer science and mathematics combined major was the first dual major created by the college. The mathematics requirements focus on courses that have computing applications or form the basis for further studies in mathematical theory. The program emphasizes the strong ties between computer science and mathematics that date back to the origins of machine computation in the 1930s and 1940s—and persist to this day.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800 (Integrative course)	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4300	Computer Graphics (Integrative course) ¹	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete eight credits of CS, IS or DS classes that are not already required. Choose courses within the following ranges:	8
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

¹ CS 4300 satisfies the capstone requirement.

Mathematics Courses

Code	Title	Hours
Calculus Courses		
MATH 1341	Calculus 1 for Science and Engineering (a grade of C– or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C– or higher is required)	4
MATH 2321	Calculus 3 for Science and Engineering	4
Mathematics Courses		
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4

MATH 3175	Group Theory	4
MATH 3527	Number Theory 1	4
Mathematics Electives		
Complete three courses in the following range:		12
MATH 3001 to MATH 4999 but not MATH 4000		

Supporting Course

Code	Title	Hours
Complete one of the following:		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete seven general electives.		28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	Elective	4	Vacation
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	MATH 2321	4	
CS 2500 and CS 2501	5	MATH 1342	4			
MATH 1341	4	Elective	4			
ENGW 1111	4					
		19	18	8		0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 3500	4	CS 1210	1	Elective	4	Co-op
MATH 2331	4	CS 3000	4	MATH 3081	4	
MATH 2341	4	CS elective	4			
CS 3800	4	MATH 3527	4			
		MATH elective	4			
		16	17	8		0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		Math elective	4	Elective	4	Co-op
		CS 4300	4	Elective	4	
		ENGW 3302	4			
		MATH 3175	4			
		THTR 1170	1			
		0	17	8		0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4500 and CS 4501	4	Elective	4	
		CS elective	4	Elective	4	
		Math elective	4			
		Computing and social issues	4			
		0	16	8		

Total Hours: 135

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation
CS 2500 and CS 2501	5	CS 2800 and CS 2801	5			
MATH 1341	4	MATH 1342	4			
ENGW 1111	4	Elective	4			

CS 1200	1						
	19	18	0	0			
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 3000	4	Vacation	0	Co-op	0
MATH 2321	4	MATH 2331	4				
MATH 2341	4	MATH 3081	4				
Elective	4	CS 1210	1				
		Elective	4				
	16	17	0	0			
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	Elective	4	Co-op	0
		CS 4300	4	Elective	4		
		MATH 3175	4				
		ENGW 3302	4				
		THTR 1170	1				
	0	17	8	0			
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4500 and CS 4501	4	Elective	4	Co-op	0
		MATH 3527	4	Elective	4		
		MATH elective	4				
		CS elective	4				
	0	16	8	0			
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	CS elective	4				
		Computing and social issues	4				
		MATH elective	4				
		MATH elective	4				
	0	16	16				

Total Hours: 135

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	CS 2800 and CS 2801	5				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
CS 1200	1						
	19	18	0	0			
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0

MATH 2321	4						
MATH 2341	4						
CS 1210	1						
Elective	4						
	17	0	0	0			
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op	0	Co-op	0	Elective	4
MATH 2331	4					Elective	4
MATH 3081	4						
Elective	4						
THTR 1170	1						
	17	0	0	8			
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op	0	Co-op	0	Elective	4
CS 4300	4					Elective	4
MATH 3527	4						
ENGW 3302	4						
	16	0	0	8			
Year 5							
Fall	Hours	Spring	Hours				
CS 4500 and CS 4501	4	CS elective	4				
MATH 3175	4	Computing and social issues	4				
MATH elective	4	MATH elective	4				
CS elective	4	MATH elective	4				
	16	16					

Total Hours: 135

Economics and Mathematics, BS

Given the mathematical and graphical models used extensively in economics, economics and mathematics are natural partners. Our combined major with mathematics is designed for students who want to further develop their mathematics skills to enhance their understanding and interest in economics. This combined major is strongly recommended for students with an interest in pursuing graduate studies in economics.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Code	Title	Hours
Introduction to College		
ECON 1000 or MATH 1000	Economics at Northeastern Mathematics at Northeastern	1
Required Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2560	Applied Econometrics	4
Economics Electives		
Complete four economics electives with not more than two at the introductory level:		16
<i>Introductory</i>		
ECON 1200 to ECON 1990		
<i>Intermediate/Advanced</i>		
ECON 2990 to ECON 3499		
ECON 3915	Intermediate Selected Topics in Macroeconomics	
ECON 3916	Intermediate Selected Topics in Microeconomics	
ECON 3990	Elective	
ECON 4600 to ECON 4681		
ECON 4915 to ECON 4916		
ECON 4965	Undergraduate Teaching Experience 1	
ECON 4970 to ECON 4990		
ECON 4992	Directed Study	
ECON 4994	Internship	

Mathematics Requirements

Code	Title	Hours
Required Mathematics		
MATH 1365	Introduction to Mathematical Reasoning	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Mathematics Electives		
Complete two courses in the following range:		8
MATH 3001 to MATH 4999		
The following courses are recommended:		

MATH 3150	Real Analysis
MATH 4581	Statistics and Stochastic Processes

Breadth Course

Code	Title	Hours
Computer Science		
CS 1100	Computer Science and Its Applications	4

Integrative Requirements

Code	Title	Hours
Advanced Writing in the Disciplines		
ENGW 3308	Advanced Writing in the Social Sciences	4
Integrative Course		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
MATH 4025	Applied Mathematics Capstone	
MATH 5131	Introduction to Mathematical Methods and Modeling	

Combined-Major GPA/Credit Requirement

Code	Title	Hours
A GPA of 2.000 is required in the following six courses with no grade lower than C-		
ECON 1115	Principles of Macroeconomics	
ECON 1116	Principles of Microeconomics	
ECON 2315	Macroeconomic Theory	
ECON 2316	Microeconomic Theory	
ECON 2560	Applied Econometrics	
MATH 3081	Probability and Statistics	

A cumulative GPA of 2.000 is required in all math courses.

A grade of C or higher is required in all math courses numbered MATH 2999 or below; grades below C will not count toward the degree.

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Graphic and Information Design and Mathematics, BS

The Department of Mathematics and the Department of Art + Design offer a combined major in mathematics and graphic and information design. Students interested in the combined major integrate the study of mathematical reasoning including methods for analyzing and solving problems encountered in the physical world with the design of message and meaning, integrating text and image to visualize concepts and data to enhance human understanding of complex and vital knowledge.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Difference and Diversity (DD), and Ethical Reasoning (ER) must be met through electives.

Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4
Degree Project		
ARTG 4550	Design Degree Project 1	4
Art and Design Elective		
ARTG 4551 can count as an Art and Design elective as well as a capstone.		
Complete one of the following: 4		
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4551	Design Degree Project 2	
ARTG 4552	Information Design 2	

ARTG 4553	Environmental Information Design
ARTG 4554	Typography 3

Mathematics Requirements

Code	Title	Hours
Math Reasoning		
MATH 1365	Introduction to Mathematical Reasoning	4
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate Math		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Advanced Elective		
Complete one of the following: 4		
MATH 3150	Real Analysis	
MATH 3175	Group Theory	
MATH 3560	Geometry	
Mathematics Elective		
MATH 4025 can count as an upper-level math elective as well as a capstone.		
Complete one course in the following range: 4		
MATH 3101 to MATH 4899		

Integrative Requirement

Code	Title	Hours
ARTG 3451	Information Design 1	4

Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Mathematics and Business Administration, BS

A combined major combines two majors in a way that allows a student to fulfill all requirements within the standard 128 credits. For details, see program requirements.

Current students can also find details about combined majors and minors by going to their audit, clicking on “explore options,” and finding the appropriate program. Students will be able to see a list of required courses and will be able to track their progress toward fulfilling them.

In the BS combined mathematics and business administration degree program, business and mathematics courses lay the groundwork for strong basic training in finance.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Requirements

Code	Title	Hours
Required Courses		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 1365	Introduction to Mathematical Reasoning	4
MATH 3081	Probability and Statistics	4
Calculus and Linear Algebra (Required) and Differential Equations (Recommended)		
Complete either Option 1 or Option 2 below:		8
<i>Option 1 (Recommended)</i>		
MATH 2321	Calculus 3 for Science and Engineering	
MATH 2341	Differential Equations and Linear Algebra for Engineering	
<i>Option 2</i>		
MATH 2321 or MATH 2323	Calculus 3 for Science and Engineering Calculus 3 for Business, Economics, and Mathematics	
MATH 2331	Linear Algebra	
Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1
Mathematics Electives		
Complete three courses in the range MATH 3001 to MATH 5999. The following courses are recommended:		12
MATH 4681	Probability and Risks	
MATH 4682	Theory of Interest and Basics of Life Insurance	
MATH 4581	Statistics and Stochastic Processes	

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4
Marketing		
MKTG 2201	Introduction to Marketing	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4

Strategy in Action

Code	Title	Hours
STRT 4501	Strategy in Action	4

Integrative Course

Note: Financial Risk Management (FINA 4512) also counts toward the finance concentration.

Code	Title	Hours
FINA 4512	Financial Risk Management	4

Finance Concentration

Code	Title	Hours
Finance Requirements		
FINA 3301	Corporate Finance	4
FINA 3303	Investments	4
FINA 4512	Financial Risk Management	4
Finance Elective		
Complete one of the following:		4
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 4604	Fixed-Income Securities (Recommended)	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4526	Core Topics in Alternative Investments	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
FINA 4983	Special Topics in Finance	

Second Business Concentration (Optional)

A second business concentration is optional and may be chosen from the following list. Requirements for the concentrations are listed below (p. 254).

- Accounting (p. 254)
- Business/Interdisciplinary (p. 254)
- Entrepreneurship and Innovation (p. 254)
- Management (p. 255)
- Management Information Systems (p. 255)
- Marketing (p. 255)
- Supply Chain Management (p. 255)

Supplemental Courses

Code	Title	Hours
Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
Co-op Preparation		

BUSN 1103	Professional Development for Business Co-op	1
or EESC 2000	Professional Development for Co-op	

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Mathematics GPA Requirement

Minimum 2.000 GPA required in all mathematics courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN BUSINESS/INTERDISCIPLINARY

Code	Title	Hours
Complete four courses in consultation with approved D'Amore-McKim School of Business faculty member.		16

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following:	4
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ENTR 4501	Business Planning for Technology Ventures
ENTR 4503	Business Planning for Small and Medium Enterprises
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures
ENTR 4506	Advanced Studies in Social Enterprise

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following:	8
ENTR 2206	Global Social Enterprise
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 2301	Innovation! (if not used as introductory course)
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)
ENTR 3212	Innovation for Social Change
ENTR 3217	Global Family Business Leadership
ENTR 3220	International Entrepreneurship and Innovation Consulting
ENTR 3305	Entrepreneurial Strategy and Business Model Design
ENTR 3306	Global Entrepreneurship
ENTR 3330	Lean Design and Development for Entrepreneurs
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises
ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:	12	
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	

MGMT 3350	Managing a Diverse Workforce
MGMT 3360	Law and the Legal Process
MGMT 3420	Managing Human Capital
MGMT 3510	Managing Global Teams Virtually and Locally
MGMT 3530	Project Management
MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	

MKTG 4508	Digital Marketing
MKTG 4510	New Product Development
MKTG 4512	International Marketing

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Mathematics and Physics, BS

Mathematics and physics have been linked since antiquity. By combining physics and mathematics you can take closely related courses in each discipline, such as statistical mechanics and stochastic processes, mechanics and dynamical systems, thermodynamics and Fourier Series, and quantum mechanics and partial differential equations. The two departments jointly offer a course in mathematical methods in physics.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Requirements

Code	Title	Hours
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Math		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
MATH 3150	Real Analysis	4
MATH 3175	Group Theory	4

Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1

Mathematics Elective		
Complete one course in the following range:		4
MATH 3101 to MATH 4899		

Physics Requirements

Code	Title	Hours
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Physics 1		
Complete one of the following:		5

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
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PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
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Physics 2		
Complete one of the following:		5

PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
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PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
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Intermediate Physics

PHYS 2303	Modern Physics	4
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PHYS 2305	Thermodynamics and Statistical Mechanics	4
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PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
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Advanced Physics

PHYS 3600	Advanced Physics Laboratory	4
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PHYS 3602	Electricity and Magnetism	4
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Elective Courses

Complete two courses in the following range:		8
PHYS 3000 to PHYS 7999		

Integrative Courses

Code	Title	Hours
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PHYS 3601	Classical Dynamics	4
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MATH 4545 or MATH 4525	Fourier Series and PDEs Applied Analysis	4
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Combined-Major Credit Requirement

Complete 83 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341	4	MATH 1342	4	Vacation	0	Vacation	0
ENGW 1111	4	PHYS 1165	4				
Elective	4	PHYS 1166	1				

PHYS 1161	4	Elective	4				
PHYS 1162	1	Elective	4				
MATH 1000	1						
		18			17		
					0		
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	MATH 2341	4	Vacation	0	Co-op	0
Elective	4	MATH 2331	4				
PHYS 2303	4	PHYS 2305	4				
PHYS 2371	3	Elective	4				
PHYS 2372	1	EESC 2000	1				
		16			17		
					0		
						0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601	4	PHYS 3600	4	Co-op	0
		PHYS 3602	4	MATH 3081	4		
		MATH 3150	4				
		Elective	4				
		MATH 3000	1				
		0			17		
					8		
						0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 3175	4	Elective	4	Co-op	0
		MATH elective	4	Elective	4		
		PHYS undergraduate elective	4				
		ENGW 3315	4				
		0			16		
					8		
						0	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS undergraduate elective	4				
		PHYS undergraduate elective	4				
		MATH 4025	4				
		MATH 4545	4				
		0			16		

Total Hours: 133

Mathematics and Political Science, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Mathematics Requirements

Code	Title	Hours
Problem Solving		
MATH 1365	Introduction to Mathematical Reasoning	4
Calculus		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Mathematics		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Math Electives		
Complete two courses in the following range that are not required in the requirements above:		8
MATH 30001 to MATH 5999		

Political Science Requirements

Code	Title	Hours
Political Science Required Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Thought		
POLS 2325	Ancient Philosophy and Political Thought	4
POLS 2328	Modern Political Thought	4
POLS 2330	American Political Thought	4
POLS 2332	Contemporary Political Thought	4
Political Science Electives		
Complete three POLS courses numbered 2000 and above.		12

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below.

- American political institutions (p. 570)
- Campaigns and elections (p. 570)
- Comparative politics (p. 570)
- Identity, culture, and politics (p. 571)
- International relations and diplomacy (p. 571)

- Law and legal studies (p. 571)
- Public policy (p. 571)
- Security studies (p. 571)

Integrative Requirement

Code	Title	Hours
POLS 3402		

Mathematics and Political Science Combined-Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Optional Political Science Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following: 16		
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following: 8		
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following: 4		
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following: 8		

POLS 3435	Politics and Governance of Europe and the European Union
POLS 3445	
POLS 3450	
POLS 3460	
POLS 3465	Government and Politics in the Middle East
POLS 3475	
POLS 3480	
POLS 3485	
Experiential/Practicum Requirement	
Complete one of the following: 4	
POLS 4915	Model Arab League
POLS 4918	Model NATO
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	

POLS 3302	Judicial Process and Behavior
POLS 3324	Law and Society
POLS 3406	International Law
POLS 4500	U.S. Constitutional Law
POLS 4505	U.S. Civil Liberties

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Mathematics, Minor

A math minor can be combined with any other major at Northeastern and can be obtained by completing six math courses: two calculus courses, two intermediate courses, and two upper-level courses.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
Biology majors may substitute the following two courses:		
MATH 1251	Calculus and Differential Equations for Biology 1	

MATH 1252	Calculus and Differential Equations for Biology 2
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Intermediate-Level Courses

Code	Title	Hours
Complete two of the following:		
MATH 2321	Calculus 3 for Science and Engineering	8
MATH 2341	Differential Equations and Linear Algebra for Engineering	
MATH 2331	Linear Algebra	

Mathematics Electives

Code	Title	Hours
Complete two courses in the following range:		
MATH 3001 to MATH 4699		1

¹ MATH 4000 is excluded.

GPA Requirement

2.000 GPA required in the minor

Physics

Website (<http://www.northeastern.edu/cos/physics>)

Mark C. Williams, PhD
Professor and Chair

110 Dana Research Center
617.373.2902
617.373.2943 (fax)
physics@northeastern.edu

Physics examines the fundamental principles that govern natural phenomena, ranging in scale from collisions of subatomic particles; through the behavior of solids, liquids, and biomolecules; to exploding stars and colliding galaxies.

The program aims to help students experience the intellectual stimulation of studying physics and the excitement of frontline research, understand the basic principles and techniques of physics-related careers, and prepare for graduate study in physics or related fields.

Programs

The department offers several degree programs:

- BS in physics, applied physics, or biomedical physics
- BS in applied physics/MS in electrical engineering
- MS and PhD in physics

Four levels of courses are offered:

- Descriptive courses for nonscience majors with limited mathematical background
- General survey courses for students in scientific and engineering fields
- Advanced courses primarily intended for physics, biomedical physics, and applied physics majors
- Highly advanced courses primarily intended for prospective graduate students

A BS, MS, or a PhD degree in physics offers many career opportunities in industrial, government, and academic high-technology laboratories as scientists or engineers.

COMBINED MAJORS

Students also have the opportunity to combine physics with another discipline through a combined major. Current combined majors with physics include mathematics, computer science, music with concentration in music composition and technology, philosophy, chemical engineering, computer engineering, electrical engineering, and mechanical engineering.

Research Opportunities for Undergraduates

Students are encouraged to participate in the excitement of cutting-edge research in particle physics, biophysics, and nanotechnology with world-renowned faculty.

Programs

Bachelor of Science (BS)

- Physics (p. 572)
- Applied Physics (p. 577)
- Biomedical Physics (p. 582)
- Computer Science and Physics (p. 339)
- Mathematics and Physics (p. 568)
- Physics and Music with Concentration in Music Technology (p. 194)
- Physics and Philosophy (p. 592)

Bachelor of Science in Chemical Engineering (BSCHE)

- Chemical Engineering and Physics (p. 383)

Bachelor of Science in Computer Engineering (BSCompE)

- Computer Engineering and Physics (p. 402)

Bachelor of Science in Electrical Engineering (BSEE)

- Electrical Engineering and Physics (p. 411)

Bachelor of Science in Mechanical Engineering (BSME)

- Mechanical Engineering and Physics (p. 430)

Minor

- Physics (p. 603)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 621)

Physics, BS

The physics program provides a strong foundation in classical and modern physics, including studies of the various physical phenomena such as electromagnetism, dynamics, building blocks of matter, energy, and radiation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3601	Classical Dynamics	4
PHYS 3602	Electricity and Magnetism	4
PHYS 3603	Electromagnetic Waves and Optics	4
PHYS 5115	Quantum Mechanics	4
Elective Course		
Complete one of the following:		4
MATH 4606	Mathematical and Computational Methods for Physics	
PHYS 3500 to PHYS 7999		
Experiential Learning		
Complete one course in experiential learning. See department for approved courses. Note: The experiential learning requirement is waived following a student presentation connected with a co-op and/or research experience. The requirement is often fulfilled by a talk at a Society of Physics Students meeting but can be fulfilled by an adequately documented presentation at a professional meeting or at an appropriate campus event. Contact your faculty advisor for additional information.		
Senior Capstone		
PHYS 5318	Principles of Experimental Physics	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
Computational Methods		
PHYS 1211	Computational Problem Solving in Physics	4
or PHYS 1130	Computing, Data, and Science	
or GE 1111	Engineering Problem Solving and Computation	
Chemistry		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
Technical Electives		
Complete 8 semester hours from the following:		8
MATH 2280	Statistics and Software	
MATH 2285	Introduction to Multisample Statistics	
MATH 2321 to MATH 5999		
PHYS 2303 to PHYS 7999		
CHEM 2311 to CHEM 5999		
BIOL 2301 to BIOL 5999		
ENVR 2300 to ENVR 5999		
CS 2990 to CS 4900		
CHME 2001 to CHME 4699		
CIVE 2001 to CIVE 4699		
EECE 2001 to EECE 5999		
ME 2001 to ME 4699		
IE 2001 to IE 4699		

Physics Major Credit Requirement

Complete 91 semester hours in the major.

Program Requirement

133 total semester hours required

Plan of Study

Note on Physics Plans of Study

Some required physics courses are offered in both fall and spring semesters, while other required courses are offered less frequently. Therefore, the suggested plan of study will vary from student to student, **depending on the year of entry for that student**. Thus, for example, a student who first enrolled in the fall of an even-numbered year should consult the plans of study listed below under Even-Numbered Year One. Those who enter in the fall of an odd-numbered year should consult the plans of study listed below under Odd-Numbered Year One.

Even-Numbered Year One

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation		
MATH 1341	4	PHYS 1166	1					

PHYS 1161	4	PHYS 1167	0
PHYS 1162	1	PHYS 1211	4
PHYS 1163	0	MATH 1342	4
ENGW 1111	4	Elective	4
Elective	4		
	18	17	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		Co-op	
PHYS 2371 ³	3	MATH 2331	4				
PHYS 2372 ³	1	MATH 2341	4				
MATH 2321	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
	17		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3602 ⁶	4	PHYS 3600 ⁴	4	Co-op	
		Technical elective	4	PHYS 3603 ⁷	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3601 ⁵	4	MATH 3081	4	Co-op	
		PHYS 5115 ⁸	4	Elective	4		
		ENGW 3307	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		PHYS 5318 ⁹	4
		PHYS advanced elective	4
		Technical elective	4
		Elective	4
	0		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2331	4
ENGW 1111	4	PHYS 1166	1	Elective	4	Elective	4
MATH 1341	4	PHYS 1167	0				
PHYS 1161	4	PHYS 1211	4				
PHYS 1162	1	MATH 1342	4				
PHYS 1163	0	Elective	4				

Elective	4				
	18	17	8	8	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	
PHYS 2371 ³	3	PHYS 3601 ⁵	4	Elective	4		
PHYS 2372 ³	1	Technical elective	4				
MATH 2341	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
	17		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3602 ⁶	4	PHYS 3603 ⁷	4	Co-op	
		PHYS 5115 ⁸	4	MATH 3081	4		
		ENGW 3307	4				
		Elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op		PHYS 5318 ⁹	4
		PHYS advanced elective	4
		Technical elective	4
		Elective	4
	0		16

Total Hours: 133

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
ENGW 1111	4	PHYS 1166	1				
MATH 1341	4	PHYS 1167	0				
PHYS 1161	4	PHYS 1211	4				
PHYS 1162	1	MATH 1342	4				
PHYS 1163	0	Elective	4				
Elective	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
PHYS 2371 ³	3					PHYS 3600 ⁴	4
PHYS 2372 ³	1						
MATH 2321	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						

EESC 2000	1						
	18	0	0				8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3601 ⁵	4	Co-op		0	Co-op	0	MATH 3081 4
MATH 2331	4						Elective 4
MATH 2341	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		0	Co-op	0	Vacation 0
PHYS 5115 ⁸	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHYS 3603 ⁷	4	PHYS 5318 ⁹	4
ENGW 3315	4	PHYS advanced elective	4
Technical elective	4	Technical elective	4
Elective	4	Elective	4
	16		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2331	4
PHYS 1161	4	PHYS 1166	1	Elective	4	MATH 2341	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	CHEM 1211	4				
Elective	4	CHEM 1212	1				
		CHEM 1213	0				
	18		18		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op		Co-op		PHYS 2305 ²	4
PHYS 2371 ³	3					Elective	4
PHYS 2372 ³	1						
PHYS 3602 ⁶	4						
Elective	4						
EESC 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3601 ⁵	4	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 3603 ⁷	4					MATH 3081	4

Elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
ENGW 3307	4	PHYS advanced elective	4
Technical elective	4	Technical elective	4
Elective	4	Elective	4
	16		16

Total Hours: 133

Odd-Numbered Year One

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	MATH 1342	4	Vacation		0	Vacation 0
ENGW 1111	4	PHYS 1165	4				
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	PHYS 1167	0				
PHYS 1162	1	PHYS 1211	4				
PHYS 1163	0	Elective	4				
Elective	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		0	Co-op 0
PHYS 2371 ³	3	MATH 2331	4				
PHYS 2372 ³	1	MATH 2341	4				
MATH 2321	4	EESC 2000	1				
CHEM 1211	4	Elective	4				
CHEM 1212	1						
CHEM 1213	0						
	17		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601 ⁵	4	PHYS 3600 ⁴	4	Co-op	0
		PHYS 3602 ⁶	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 5115 ⁸	4	PHYS 3603 ⁷	4	Co-op	0
		ENGW 3315	4	MATH 3081	4		
		Technical elective	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PHYS 5318 ⁹	4
		PHYS advanced elective	4
		Technical elective	4
		Elective	4
	0		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	MATH 1342	4	MATH 2321	4	MATH 2331	4
ENGW 1111	4	PHYS 1165	4	Elective	4	Elective	4
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	PHYS 1167	0				
PHYS 1162	1	PHYS 1211	4				
PHYS 1163	0	Elective	4				
Elective	4						
	18		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	
PHYS 2371 ³	3	PHYS 3602 ⁶	4	PHYS 3603 ⁷	4		
PHYS 2372 ³	1	Elective	4				
MATH 2341	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
	17		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3601 ⁵	4	MATH 3081	4	Co-op	
		PHYS 5115 ⁸	4	Elective	4		
		ENGW 3307	4				
		Technical elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op		PHYS 5318 ⁹	4
		PHYS advanced elective	4
		Technical elective	4
		Elective	4
	0		16

Total Hours: 133

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation	
ENGW 1111	4	PHYS 1166	1				
MATH 1341	4	PHYS 1167	0				
PHYS 1161	4	PHYS 1211	4				
PHYS 1162	1	Elective	4				
PHYS 1163	0						
Elective	4						
	18		13		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 2371 ³	3					Elective	4
PHYS 2372 ³	1						
MATH 2321	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		Co-op		PHYS 2305 ²	4
MATH 2331	4					MATH 3081	4
MATH 2341	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3601 ⁵	4	Co-op		Co-op		Vacation	
PHYS 3603 ⁷	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
ENGW 3307	4	PHYS advanced elective	4
Technical elective	4	Technical elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2331	4
PHYS 1161	4	PHYS 1166	1	Elective	4	MATH 2341	4

PHYS 1162	1	PHYS 1167	0
PHYS 1163	0	MATH 1342	4
MATH 1341	4	PHYS 1211	4
ENGW 1111	4	CHEM 1211	4
Elective	4	CHEM 1212	1
		CHEM 1213	0
	18	18	8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 2371 ³	3					Elective	4
PHYS 2372 ³	1						
PHYS 3602 ⁶	4						
Elective	4						
EESC 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 5115 ⁸	4	Co-op		Co-op		PHYS 2305 ²	4
ENGW 3307	4					MATH 3081	4
Technical elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours
PHYS 3601 ⁵	4	PHYS 5318 ⁹	4
PHYS 3603 ⁷	4	PHYS advanced elective	4
Elective	4	Technical elective	4
Elective	4	Elective	4
	16		16

Total Hours: 133

- ¹ PHYS 2303 offered every fall and spring
- ² PHYS 2305 offered every spring and summer 2 (even years)
- ³ PHYS 2371/2372 offered every fall
- ⁴ PHYS 3600 offered every summer 1 and summer 2
- ⁵ PHYS 3601 offered spring and fall (even years)
- ⁶ PHYS 3602 offered every fall and spring
- ⁷ PHYS 3603 offered fall (even years) and summer 1 (odd years)
- ⁸ PHYS 5115 offered every fall and spring
- ⁹ PHYS 5318 offered every spring

Applied Physics, BS

The applied physics BS degree is a flexible, interdisciplinary-oriented program designed to provide students with a solid background in basic physics, in conjunction with the opportunity to sample courses from a wide range of disciplines, including engineering, biology, chemistry, math, environmental studies, and computer science. This program seeks

to enable students to prepare for a variety of careers in, for example, nanotechnology, a medical field, environmental research, or even finance.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Applied Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 3603	Electromagnetic Waves and Optics	4
Advanced Physics Electives		
Complete three of the following:		12
PHYS 3601	Classical Dynamics	
PHYS 5111	Astrophysics and Cosmology	
PHYS 5113	Introduction to Particle and Nuclear Physics	
PHYS 5115	Quantum Mechanics	
PHYS 5116	Complex Networks and Applications	
PHYS 4621	Biological Physics 1	
PHYS 4623	Medical Physics	
PHYS 4651	Medical Physics Seminar 1	

PHYS 4652	Medical Physics Seminar 2
PHYS 5260	Introduction to Nanoscience and Nanotechnology
MATH 4606	Mathematical and Computational Methods for Physics

Experiential Learning

Note: The experiential learning requirement is waived following a student presentation connected with a co-op and/or research experience. The requirement is often fulfilled by a talk at a Society of Physics Students meeting but can be fulfilled by an adequately documented presentation at a professional meeting or at an appropriate campus event. Contact your faculty advisor for additional information.

PHYS 4996	Experiential Education Directed Study	4
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Senior Capstone

PHYS 5318	Principles of Experimental Physics	4
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Supporting Courses

Code	Title	Hours
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Mathematics

MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2331	Linear Algebra	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4

Computational Methods

PHYS 1211	Computational Problem Solving in Physics	4
or PHYS 1130	Computing, Data, and Science	
or GE 1111	Engineering Problem Solving and Computation	

Chemistry

CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
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Technical Electives

Complete 16 semester hours of technical electives from the following: 16

MATH 2280	Statistics and Software
MATH 2285	Introduction to Multisample Statistics
MATH 2321 to MATH 5999	
PHYS 2303 to PHYS 7999	
CHEM 2311 to CHEM 5999	
BIOL 2301 to BIOL 5999	
ENVR 2300 to ENVR 5999	
CS 2990 to CS 4900	
CHME 2001 to CHME 4699	
CIVE 2001 to CIVE 4699	
EECE 2001 to EECE 5999	
ME 2001 to ME 4699	
IE 2001 to IE 4699	

Applied Physics Major Credit Requirement

Complete 91 semester hours in the major.

Program Requirement

133 total semester hours required

Plan of Study**Note on Applied Physics Plans of Study**

Some required physics courses are offered in both fall and spring semesters, while other required courses are offered less frequently. Therefore, the suggested plan of study will vary from student to student, depending on the year of entry for that student. Thus, for example, a student who first enrolled in the fall of an even-numbered year should consult the plans of study listed below under Even-Numbered Year One. Those who enter in the fall of an odd-numbered year should consult the plans of study listed below under Odd-Numbered Year One.

Even-Numbered Year One**FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
ENGW 1111	4	MATH 1342	4				
MATH 1341	4	Elective	4				
Elective	4						
		18		17		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation	0	Co-op	0
PHYS 2371 ³	3	MATH 2331	4				
PHYS 2372 ³	1	MATH 2341	4				
MATH 2321	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
		17		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3602 ⁵	4	PHYS 3600 ⁴	4	Co-op	0
		Technical elective	4	PHYS 3603 ⁶	4		
		Technical elective	4				
		Elective	4				
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3307	4	Elective	4	Co-op	0
		PHYS advanced elective	4	Elective	4		
		PHYS advanced elective	4				
		Technical elective	4				
		0		16		8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PHYS 5318 ⁷	4
		PHYS advanced elective	4
		Technical elective	4
		Elective	4
	0		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
Elective	4						
	18		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	
PHYS 2371 ³	3	PHYS 3602 ⁵	4	Elective	4		
PHYS 2372 ³	1	Elective	4				
MATH 2331	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
	17		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGW 3307	4	PHYS 3603 ⁶	4	Co-op	
		PHYS advanced elective	4	Technical elective	4		
		PHYS advanced elective	4				
		Technical elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op		PHYS 5318 ⁷	4
		PHYS advanced elective	4
		Technical elective	4

Technical elective	4
	0
	16

Total Hours: 133

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
Elective	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
PHYS 2371 ³	3					MATH 2341	4
PHYS 2372 ³	1						
MATH 2321	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁵	4	Co-op	0	Co-op	0	PHYS 3600 ⁴	4
MATH 2331	4					Elective	4
Technical elective	4						
Technical elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3307	4	Co-op	0	Co-op	0	Vacation	0
Technical elective	4						
Technical elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHYS 3603 ⁶	4	PHYS 5318 ⁷	4
Elective	4	PHYS advanced elective	4
Elective	4	PHYS advanced elective	4

Elective	4 PHYS advanced elective	4
16		16

Total Hours: 133

Odd-Numbered Year One**FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
ENGW 1111	4	MATH 1342	4				
MATH 1341	4	Elective	4				
Elective	4						
18		17		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation	0	Co-op	0
PHYS 2371 ³	3	MATH 2331	4				
PHYS 2372 ³	1	MATH 2341	4				
MATH 2321	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
17		17		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 3602 ⁵	4	PHYS 3600 ⁴	4	Co-op	0
		Technical elective	4	Elective	4		
		Technical elective	4				
		Elective	4				
0		16		8		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3307	4	PHYS 3603 ⁶	4	Co-op	0
		PHYS advanced elective	4	Elective	4		
		PHYS advanced elective	4				
		Technical elective	4				
0		16		8		0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PHYS 5318 ⁷	4
		PHYS advanced elective	4

Technical elective	4
Elective	4
0	
16	

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	PHYS 1211	4				
ENGW 1111	4	Elective	4				
Elective	4						
18		17		8		8	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	0
PHYS 2371 ³	3	PHYS 3602 ⁵	4	PHYS 3603 ⁶	4		
PHYS 2372 ³	1	Elective	4				
MATH 2331	4	Elective	4				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1						
CHEM 1213	0						
17		17		8		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGW 3307	4	Technical elective	4	Co-op	0
		PHYS advanced elective	4	Elective	4		
		PHYS advanced elective	4				
		Technical elective	4				
0		16		8		0	

Year 4

Fall	Hours	Spring	Hours
Co-op		PHYS 5318 ⁷	4
		PHYS advanced elective	4
		Technical elective	4
		Technical elective	4
0		16	

Total Hours: 133

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
Elective	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0	PHYS 3600 ⁴	4
PHYS 2371 ³	3					MATH 2341	4
PHYS 2372 ³	1						
MATH 2321	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁵	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
MATH 2331	4					Elective	4
Technical elective	4						
Technical elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3603 ⁶	4	Co-op	0	Co-op	0	Vacation	0
ENGW 3307	4						
Technical elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Technical elective	4	PHYS 5318 ⁷	4
Elective	4	PHYS advanced elective	4
Elective	4	PHYS advanced elective	4

Elective	4	PHYS advanced elective	4
	16		16

Total Hours: 133

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	Elective	4				
Elective	4						
	18		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0	PHYS 3600 ⁴	4
PHYS 2371 ³	3					Elective	4
PHYS 2372 ³	1						
MATH 2331	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁵	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
ENGW 3307	4					Technical elective	4
Technical elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours
PHYS 3603 ⁶	4	PHYS 5318 ⁷	4
Technical elective	4	PHYS advanced elective	4
Technical elective	4	PHYS advanced elective	4
Elective	4	PHYS advanced elective	4
	16		16

Total Hours: 133

¹ PHYS 2303 offered every fall and spring

² PHYS 2305 offered every spring and summer 2 (even years)

³ PHYS 2371/2372 offered every fall

- ⁴ PHYS 3600 offered every summer 1 and summer 2
⁵ PHYS 3602 offered every fall and spring
⁶ PHYS 3603 offered fall (even years) and summer 1 (odd years)
⁷ PHYS 5318 offered every spring

Biomedical Physics, BS

The biomedical physics program seeks to understand the role of physical processes occurring on molecular, cellular, or macroscopic scales; in vital biological functions, ranging from the interaction of chemicals with DNA, to the extraction of oxygen from red blood cells, to the generation of complex electrical signals in the brain and nervous system; and physical principles of medical devices. The biomedical physics program also offers a premed (prehealth) specialized track.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Biomedical Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 3603	Electromagnetic Waves and Optics	4

Biomedical Physics		
PHYS 4621	Biological Physics 1	4
PHYS 4623	Medical Physics	4
PHYS 4651	Medical Physics Seminar 1	4
PHYS 4652	Medical Physics Seminar 2	4

Advanced Physics Elective		
Complete one of the following:		4
MATH 4606	Mathematical and Computational Methods for Physics	
PHYS 2300 to PHYS 7999		

Experiential Learning		
Note: The experiential learning requirement is waived following a student presentation connected with a co-op and/or research experience. The requirement is often fulfilled by a talk at a Society of Physics Students meeting but can be fulfilled by an adequately documented presentation at a professional meeting or at an appropriate campus event. Contact your faculty advisor for additional information.		4
PHYS 4996	Experiential Education Directed Study	4
Senior Capstone		
PHYS 5318	Principles of Experimental Physics	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
Computational Methods		
PHYS 1211	Computational Problem Solving in Physics	4
or PHYS 1130 or GE 1111	Computing, Data, and Science Engineering Problem Solving and Computation	
Biology		
BIOL 1111 and BIOL 1112	General Biology 1 and Lab for BIOL 1111	5
BIOL 1113 and BIOL 1114	General Biology 2 and Lab for BIOL 1113	5
Chemistry		
CHEM 1211 and CHEM 1212	General Chemistry 1 and Lab for CHEM 1211	5
Technical Electives		
Complete two of the following:		8
MATH 2280	Statistics and Software	
MATH 2285	Introduction to Multisample Statistics	
MATH 2321 to MATH 5999		
PHYS 2303 to PHYS 7999		
CHEM 2311 to CHEM 5999		
BIOL 2301 to BIOL 5999		
ENVR 2300 to ENVR 5999		
CS 2990 to CS 4900		
CHME 2001 to CHME 4699		
CIVE 2001 to CIVE 4699		
EECE 2001 to EECE 5999		

ME 2001 to ME 4699

IE 2001 to IE 4699

Biomedical Physics Major Credit Requirement

Complete 97 semester hours in the major.

Program Requirement

135 total semester hours required

Plan of Study

Additional Recommended Courses for Premedical School Track

In addition to the required courses for the BS in Biomedical Physics, students who are pursuing the premed/health track are encouraged to enroll in the following courses, utilizing available elective slots:

Code	Title	Hours
CHEM 1214 and CHEM 1215 and CHEM 1216	General Chemistry 2 and Lab for CHEM 1214 and Recitation for CHEM 1214	5
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	5
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5
MATH 2280	Statistics and Software	4

Note on Biomedical Physics Plans of Study

Some required physics courses are offered in both fall and spring semesters, while other required courses are offered less frequently. Therefore, the suggested plan of study will vary from student to student, depending on the year of entry for that student. Thus, for example, a student who first enrolled in the fall of an even-numbered year should consult the plans of study listed below under Even-Numbered Year One. Those who enter in the fall of an odd-numbered year should consult the plans of study listed below under Odd-Numbered Year One.

Even-Numbered Year One

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0	
MATH 1341	4	PHYS 1166	1					
BIOL 1111	4	PHYS 1167	0					
BIOL 1112	1	PHYS 1211	4					
ENGW 1111	4	MATH 1342	4					
PHYS 1161	4	Elective	4					
PHYS 1162	1							
PHYS 1163	0							
		19			17			0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation	0	Co-op	0

PHYS 2371 ³	3	MATH 2341	4					
PHYS 2372 ³	1	BIOL 1113	4					
MATH 2321	4	BIOL 1114	1					
CHEM 1211	4	EESC 2000	1					
CHEM 1212	1	Elective	4					
CHEM 1213	0							
		17			18			0

Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	PHYS 3602 ⁶	4	PHYS 3600 ⁴	4	Co-op	0	
		PHYS 4621 ¹⁰	4	PHYS 3603 ⁷	4			
		Technical elective	4					
		Elective	4					
		0			16			8

Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	PHYS 5318 ⁹	4	PHYS 4623 ¹¹	4	Co-op	0	
		ENGW 3307	4	Elective	4			
		PHYS advanced elective	4					
		Technical elective	4					
		0			16			8

Year 5								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Co-op	0	PHYS 4651 ¹²	4					
		PHYS 4652 ¹³	4					
		Elective	4					
		Elective	4					
		0			16			0

Total Hours: 135

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4	
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4	
PHYS 1162	1	PHYS 1167	0					
PHYS 1163	0	PHYS 1211	4					
MATH 1341	4	MATH 1342	4					
ENGW 1111	4	BIOL 1113	4					
BIOL 1111	4	BIOL 1114	1					
BIOL 1112	1							
		19			18			8

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	0
PHYS 2371 ³	3	PHYS 3602 ⁶	4	PHYS 4623 ¹¹	4		
PHYS 2372 ³	1	Elective	4				
CHEM 1211	4	Elective	4				
CHEM 1212	1	EESC 2000	1				

Elective	4					
	17	17	8	0		
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		PHYS 4621 ¹⁰	4	PHYS 3603 ⁷	4	Co-op
		PHYS 4651 ¹²	4	Technical elective	4	
		ENGW 3307	4			
		PHYS advanced elective	4			
	0	16	8	0		

Year 4						
Fall	Hours	Spring	Hours			
Co-op		PHYS 4652 ¹³	4			
		PHYS 5318 ⁹	4			
		Technical elective	4			
		Elective	4			
	0	16				

Total Hours: 135

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation
ENGW 1111	4	PHYS 1166	1			
MATH 1341	4	PHYS 1167	0			
PHYS 1161	4	MATH 1342	4			
PHYS 1162	1	PHYS 1211	4			
PHYS 1163	0	BIOL 1113	4			
BIOL 1111	4	BIOL 1114	1			
BIOL 1112	1					
	19	18	0	0		

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 2303 ¹	4	Co-op	0	Co-op	0	PHYS 2305 ²
PHYS 2371 ³	3					MATH 2341
PHYS 2372 ³	1					
MATH 2321	4					
CHEM 1211	4					
CHEM 1212	1					
CHEM 1213	0					
EESC 2000	1					
	18	0	0	0		8

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 4621 ¹⁰	4	Co-op	0	Co-op	0	PHYS 3600 ⁴
PHYS 4623 ¹¹	4					Elective
Technical elective	4					
Elective	4					
	16	0	0	0		8

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
PHYS 3602 ⁶	4	Co-op	0	Co-op	0
PHYS 4651 ¹²	4				
Technical elective	4				
Elective	4				
	16	0	0	0	0

Year 5					
Fall	Hours	Spring	Hours		
PHYS 3603 ⁷	4	PHYS 4652 ¹³	4		
ENGW 3307	4	PHYS 5318 ⁹	4		
Elective	4	PHYS advanced elective	4		
Elective	4	Elective	4		
	16	16			

Total Hours: 135

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4
PHYS 1161	4	PHYS 1166	1	Elective	4
PHYS 1162	1	PHYS 1167	0		
PHYS 1163	0	MATH 1342	4		
MATH 1341	4	PHYS 1211	4		
ENGW 1111	4	BIOL 1113	4		
BIOL 1111	4	BIOL 1114	1		
BIOL 1112	1				
	19	18	8		8

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0
PHYS 2371 ³	3				PHYS 3600 ⁴
PHYS 2372 ³	1				PHYS 2305 ²
PHYS 3602 ⁶	4				
CHEM 1211	4				
CHEM 1212	1				
CHEM 1213	0				
EESC 2000	1				
	18	0	0	0	8

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
PHYS 3603 ⁷	4	Co-op	0	Co-op	0
PHYS 4621 ¹⁰	4				Technical elective
PHYS 4623 ¹¹	4				Elective
Elective	4				
	16	0	0	0	8

Year 4					
Fall	Hours	Spring	Hours		
PHYS 4651 ¹²	4	PHYS 4652 ¹³	4		

ENGW 3307	4	PHYS 5318 ⁹	4
Technical elective	4	PHYS advanced elective	4
Elective	4	Elective	4
		16	16

Total Hours: 135

Odd-Numbered Year One

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
MATH 1341	4	PHYS 1166	1				
BIOL 1111	4	PHYS 1167	0				
BIOL 1112	1	PHYS 1211	4				
ENGW 1111	4	MATH 1342	4				
PHYS 1161	4	Elective	4				
PHYS 1162	1						
PHYS 1163	0						
		19	17	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation	0	Co-op	0
PHYS 2371 ³	3	MATH 2341	4				
PHYS 2372 ³	1	BIOL 1113	4				
MATH 2321	4	BIOL 1114	1				
CHEM 1211	4	EESC 2000	1				
CHEM 1212	1	Elective	4				
CHEM 1213	0						
		17	18	0	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 ⁶	4	PHYS 3600 ⁴	4	Co-op	0
		PHYS advanced elective	4	PHYS 4623 ¹¹	4		
		Technical elective	4				
		Elective	4				
		0	16	8	0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 4621 ¹⁰	4	PHYS 3603 ⁷	4	Co-op	0
		PHYS 4651 ¹²	4	Elective	4		
		ENGW 3307	4				
		Technical elective	4				
		0	16	8	0		

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PHYS 4652 ¹³	4
		PHYS 5318 ⁹	4

Elective	4
Elective	4
0	16

Total Hours: 135

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	BIOL 1113	4				
BIOL 1111	4	BIOL 1114	1				
BIOL 1112	1						
		19	18	8	8		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	PHYS 3600 ⁴	4	Co-op	
PHYS 2371 ³	3	PHYS 3602 ⁶	4	PHYS 3603 ⁷	4		
PHYS 2372 ³	1	Elective	4				
CHEM 1211	4	Elective	4				
CHEM 1212	1	EESC 2000	1				
Elective	4						
		17	17	8	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PHYS 5318 ⁹	4	PHYS 4623 ¹¹	4	Co-op	
		ENGW 3307	4	Technical elective	4		
		PHYS advanced elective	4				
		Technical elective	4				
		0	16	8	0		

Year 4

Fall	Hours	Spring	Hours
Co-op		PHYS 4621 ¹⁰	4
		PHYS 4651 ¹²	4
		PHYS 4652 ¹³	4
		Elective	4
		0	16

Total Hours: 135

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				

ENGW 1111	4	MATH 1342	4
MATH 1341	4	BIOL 1113	4
BIOL 1111	4	BIOL 1114	1
BIOL 1112	1		
	19	18	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op	0	Co-op	0	MATH 2341	4
PHYS 2371 ³	3					Elective	4
PHYS 2372 ³	1						
MATH 2321	4						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
Technical elective	4					PHYS 3600 ⁴	4
Elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3603 ⁷	4	Co-op	0	Co-op	0	Vacation	0
PHYS 4621 ¹⁰	4						
PHYS 4623 ¹¹	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHYS 4651 ¹²	4	PHYS 4652 ¹³	4
ENGW 3307	4	PHYS 5318 ⁹	4
Elective	4	PHYS advanced elective	4
Elective	4	Elective	4
	16		16

Total Hours: 135

FOUR YEARS, TWO CO-OPS IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	PHYS 1211	4				
MATH 1341	4	MATH 1342	4				
ENGW 1111	4	BIOL 1113	4				
BIOL 1111	4	BIOL 1114	1				

BIOL 1112	1				
	19		18		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 2371 ³	3					Technical elective	4
PHYS 2372 ³	1						
CHEM 1211	4						
CHEM 1212	1						
CHEM 1213	0						
Elective	4						
EESC 2000	1						
	18		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op	0	Co-op	0	PHYS 2305 ²	4
ENGW 3307	4					Elective	4
Technical elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours
PHYS 3603 ⁷	4	PHYS 4651 ¹²	4
PHYS 4621 ¹⁰	4	PHYS 4652 ¹³	4
PHYS 4623 ¹¹	4	PHYS 5318 ⁹	4
Elective	4	PHYS advanced elective	4
	16		16

Total Hours: 135

- ¹ PHYS 2303 offered every fall & spring
- ² PHYS 2305 offered every spring & summer 2 (even years)
- ³ PHYS 2371/2372 offered every fall
- ⁴ PHYS 3600 offered every summer 1 & summer 2
- ⁵ PHYS 3601 offered spring & fall (even years)
- ⁶ PHYS 3602 offered every fall & spring
- ⁷ PHYS 3603 offered fall (even years) & summer 1 (odd years)
- ⁸ PHYS 5115 offered every fall & spring
- ⁹ PHYS 5318 offered every spring
- ¹⁰ PHYS 4621 offered fall (even years) & spring (odd years)
- ¹¹ PHYS 4623 offered fall & summer 1 (even years)
- ¹² PHYS 4651 offered fall & spring (odd years)
- ¹³ PHYS 4652 offered every spring

Mathematics and Physics, BS

Mathematics and physics have been linked since antiquity. By combining physics and mathematics you can take closely related courses in each discipline, such as statistical mechanics and stochastic processes, mechanics and dynamical systems, thermodynamics and Fourier Series,

and quantum mechanics and partial differential equations. The two departments jointly offer a course in mathematical methods in physics.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Mathematics Requirements

Code	Title	Hours
Calculus		
A grade of C or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
Intermediate and Advanced Math		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4
MATH 3150	Real Analysis	4
MATH 3175	Group Theory	4
Co-op Reflections		
MATH 3000	Co-op and Experiential Learning Reflection Seminar 1	1
Mathematics Elective		
Complete one course in the following range:		4
MATH 3101 to MATH 4899		

Physics Requirements

Code	Title	Hours
Physics 1		
Complete one of the following:		
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
Physics 2		
Complete one of the following:		
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	

Intermediate Physics

PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
Elective Courses		
Complete two courses in the following range:		8
PHYS 3000 to PHYS 7999		

Integrative Courses

Code	Title	Hours
PHYS 3601	Classical Dynamics	4
MATH 4545 or MATH 4525	Fourier Series and PDEs Applied Analysis	4

Combined-Major Credit Requirement

Complete 83 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341	4	MATH 1342	4	Vacation	0	Vacation	0
ENGW 1111	4	PHYS 1165	4				
Elective	4	PHYS 1166	1				
PHYS 1161	4	Elective	4				
PHYS 1162	1	Elective	4				
MATH 1000	1						
		18		17		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	MATH 2341	4	Vacation	0	Co-op	0
Elective	4	MATH 2331	4				
PHYS 2303	4	PHYS 2305	4				
PHYS 2371	3	Elective	4				
PHYS 2372	1	EESC 2000	1				
		16		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601	4	PHYS 3600	4	Co-op	0
		PHYS 3602	4	MATH 3081	4		
		MATH 3150	4				
		Elective	4				
		MATH 3000	1				
		0		17		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MATH 3175	4	Elective	4	Co-op	0

MATH elective	4	Elective	4
PHYS undergraduate elective	4		
ENGW 3315	4		
	0	16	8

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PHYS undergraduate elective	4
		PHYS undergraduate elective	4
		MATH 4025	4
		MATH 4545	4
	0	16	

Total Hours: 133

Computer Science and Physics, BS

The computer science and physics combined major brings together three disciplines: computer science, physics, and mathematics. The mathematics requirements serve as a foundation for both computer science and physics. From hands-on experience with sophisticated physics instruments, to mathematical theory, to the latest computational innovations, our interdisciplinary approach will prepare students for the myriad challenges in today's rapidly changing world.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5

CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Computer Science Senior Seminar

THTR 1170	The Eloquent Presenter	1
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Physics Courses

Code	Title	Hours
Required Courses		
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371 (Integrative course)	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4

Capstone and Electives

Code	Title	Hours
Capstone		
Complete either one computer science capstone or the physics capstone:		4
<i>Computer Science Capstone</i>		
CS 4100	Artificial Intelligence	
CS 4300	Computer Graphics	
CS 4410	Compilers	
CS 4150	Game Artificial Intelligence	
CS 4550	Web Development	

Physics Capstone

PHYS 5318	Principles of Experimental Physics	
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Computer Science Elective

The computer science elective is not required if the student has completed the computer science capstone (above). With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Physics Elective

Only one physics elective is required if the student has completed the physics capstone (above).
 Complete two courses in the following range: **8**
 PHYS 3000 to PHYS 5999

Integrative Courses

Code	Title	Hours
Calculus		
MATH 1341	Calculus 1 for Science and Engineering (a grade of C- or higher is required)	4
MATH 1342	Calculus 2 for Science and Engineering (a grade of C- or higher is required)	4
MATH 2321	Calculus 3 for Science and Engineering	4
Additional Mathematics Requirements		
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 4525	Applied Analysis	4

Supporting Course

Code	Title	Hours
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six general electives.		24

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Exploring Creative Expression and Innovation
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines

- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

136 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	MATH 1342	4	MATH 2321	4		
CS 2500 and CS 2501	5	PHYS 1165	4				
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	ENGW 1111	4				
PHYS 1162	1						
		20		18		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 2800 and CS 2801	5	CS 3000	4	Elective	4	Co-op	
MATH 2341	4	PHYS 3602	4	Elective	4		
PHYS 2371	3	Computing and social issues	4				
PHYS 2372	1	PHYS 2305	4				
PHYS 2303	4	CS 1210	1				
		17		17		8	
						0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	PHYS 3600	4	Co-op	
		Elective	4	Elective	4		
		PHYS elective if CS capstone (CS elective if PHYS capstone)	4				
		CS or PHYS capstone	4				
		THTR 1170	1				
		0		17		8	
						0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500 and CS 4501	4	Elective	4		
		MATH 4525	4	Elective	4		
		PHYS elective	4				

ENGW 3302	4		
0	16	8	

Total Hours: 137

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	MATH 1342	4				
CS 2500 and CS 2501	5	PHYS 1165	4				
MATH 1341	4	PHYS 1166	1				
PHYS 1161	4	ENGW 1111	4				
PHYS 1162	1						
	20		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	CS 3000	4	Vacation	0	Co-op	0
PHYS 2303	4	MATH 2321	4				
PHYS 2371	3	PHYS 2305	4				
PHYS 2372	1	MATH 2341	4				
CS 2800 and CS 2801	5	CS 1210	1				
	17		17		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 3800	4	PHYS 3600	4	Co-op	0
		Elective	4	Elective	4		
		PHYS 3602	4				
		ENGW 3302	4				
		THTR 1170	1				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4500 and CS 4501	4	Elective	4	Co-op	0
		MATH 4525	4	Elective	4		
		PHYS elective	4				
		Computing and social issues	4				
	0		16		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	CS or PHYS capstone	4
		PHYS elective if CS capstone (CS elective if PHYS capstone)	4

Elective	4		
0	16		

Total Hours: 137

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	MATH 1342	4				
PHYS 1161	4	PHYS 1165	4				
PHYS 1162	1	PHYS 1166	1				
CS 1200	1	ENGW 1111	4				
MATH 1341	4						
	20		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
PHYS 2303	4						
PHYS 2371	3						
PHYS 2372	1						
CS 2800 and CS 2801	5						
CS 1210	1						
	18		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321	4	Co-op	0	Co-op	0	PHYS 2305	4
CS 3000	4					PHYS 3600	4
MATH 2341	4						
Elective	4						
	16		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3800	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
PHYS 3602	4						
ENGW 3302	4						
THTR 1170	1						
	17		0		0		8

Year 5			
Fall	Hours	Spring	Hours
CS 4500 and CS 4501	4	CS or PHYS capstone	4
MATH 4525	4	PHYS elective if CS capstone (CS elective if PHYS capstone)	4
PHYS elective	4	Elective	4

Computing and social issues	4 Elective	4
	16	16

Total Hours: 137

Physics and Music with Concentration in Music Technology, BS

The combined major in physics and music provides a strong foundation in classical and modern physics, including studies of the various physical phenomena including electromagnetism, dynamics, building blocks of matter, energy, and radiation. It also provides students with a solid background in composition for acoustic and electronic instruments and for combined and/or interactive live and digital sources. The combined major allows students to learn how physical principles influence sound production and propagation.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
<i>Physics 2</i>		
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5115	Quantum Mechanics	4
PHYS 5318	Principles of Experimental Physics	4

Music Requirements

Code	Title	Hours
Music Theory and Composition		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4

MUSC 3541	Music Analysis Seminar	4
MUST 1301	Introduction to Composition	4
Music in Context		
MUSC 1001	Music in Everyday Life	4
<i>Contemporary</i>		
Complete one course from the following:		4
MUSC 2315	History of Electronic Music	
MUSC 2101	Black Popular Music	
MUSC 2310	Popular Music Since 1945	
MUSC 2320	40,000 Years of Music Technology	
MUSC 3560	Topics in Music since 1900	
MUSI 3401	Hip Hop in the Music Industry	
Music Technology		
MUST 1220	Introduction to Music Technology	4
Music Technology Electives		
Complete two courses from the following:		8
MUST 3540	Special Topics in Music Technology	
MUST 4520	Interactive Music Programming	
MUST 4610	Composition for Electronic Instruments	
Music Technology Capstone		
MUST 4611	Music Technology Capstone/Senior Recital	4

Physics/Music Integrative Requirements

Code	Title	Hours
Integrative Course Requirements		
MUSC 2350	Acoustics and Psychoacoustics of Music	4

Physics and Music Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation	
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	MUST 1220	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
		18			17	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		Vacation	
MATH 2321	4	MUSC 1202	4				
MUSC 1201	4	MUSC 2350	4				

Elective	4	MUSC xxxx contemporary elective	4			
	16		16	0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2371 ³	3	Co-op		Co-op		PHYS 3600 ⁴	4
PHYS 2372 ³	1					Elective	4
MUST 1301	4						
MUST 2431	4						
Elective	4						
EESC 2000	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		Co-op		Vacation	
MUSC 3541	4						
MUSC xxxx music technology elective	4						
Music elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
ENGW 3307	4	MUST 4611	4
MUSC xxxx music technology elective	4		
	12		8

Total Hours: 128

FOUR YEARS, ONE CO-OP IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation		Vacation	
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	MUST 1220	4				
MUSC 1001	4	Elective	4				
ENGW 1111	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303 ¹	4	PHYS 2305 ²	4	Vacation		Elective	4
PHYS 2371 ³	3	MUSC 1202	4			Elective	4
PHYS 2372 ³	1	MUSC 2350	4				
MATH 2321	4	MUSC xxxx contemporary elective	4				

MUSC 1201	4				
	16	16	0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 3602 ⁶	4	Co-op		Co-op		PHYS 3600 ⁴	4
MUST 1301	4					ENGW 3307	4
MUST 2431	4						
MUST 3421	4						
EESC 2000	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours
PHYS 5115 ⁸	4	PHYS 5318 ⁹	4
MUSC 3541	4	MUST 4611	4
MUSC xxxx music technology elective	4		
MUSC xxxx music technology elective	4		
	16		8

Total Hours: 124

- PHYS 2303 offered fall and spring
- PHYS 2305 offered every spring and summer 2 (even years)
- PHYS 2371/2372 offered every fall
- PHYS 3600 offered every summer 1 and summer 2
- PHYS 3602 offered every fall and spring
- PHYS 5115 offered every fall and spring
- PHYS 5318 offered every spring

Physics and Philosophy, BS

The combined major in physics and philosophy provides a strong foundation in classical and modern physics, including studies of the various physical phenomena including electromagnetism, dynamics, building blocks of matter, energy, and radiation. It also provides students with an understanding of the methods and traditions of philosophical thought, as well as with opportunities to critically and collaboratively reflect on the nature of the world and the human situation in it. Students will be able to describe the method by which physical "law" is made manifest in the sciences, how this knowledge compares with other epistemological models studied in other contexts, and philosophical views on the status and source of physical "law."

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Physics Major Requirements

Code	Title	Hours
Introductory Physics		
<i>Physics 1</i>		
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
<i>Physics 2</i>		
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
Intermediate Physics		
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
Advanced Physics		
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5115	Quantum Mechanics	4
Physics Elective		
Complete one of the following:		4
MATH 4606	Mathematical and Computational Methods for Physics	
PHYS 5111	Astrophysics and Cosmology	
PHYS 5113	Introduction to Particle and Nuclear Physics	
PHYS 5116	Complex Networks and Applications	
PHYS 5260	Introduction to Nanoscience and Nanotechnology	
PHYS 4621	Biological Physics 1	
PHYS 4623	Medical Physics	
PHYS 4651	Medical Physics Seminar 1	
PHYS 4652	Medical Physics Seminar 2	

Philosophy Major Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4

PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 4500	Theory of Knowledge	4
Philosophy Advanced Elective		
Complete one of the following:		4
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete four PHIL courses. 16

Physics/Philosophy Integrative Requirements

Code	Title	Hours
Integrative Course Requirements		
PHIL 4510	Philosophy of Science	4
PHYS 3601	Classical Dynamics	4

Breadth Courses

Code	Title	Hours
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4

Physics and Philosophy Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

132 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation
PHYS 1161	4	PHYS 1166	1			
PHYS 1162	1	PHYS 1167	0			
PHYS 1163	0	MATH 1342	4			
MATH 1341	4	PHIL 2325	4			
PHIL 1115	4	Elective	4			

ENGW 1111	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303	4	PHYS 2305	4	Vacation	0	Co-op	0
PHYS 2371	3	MATH 2341	4				
PHYS 2372	1	PHIL elective	4				
MATH 2321	4	PHIL elective	4				
PHIL 2330	4	EESC 2000	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601 ¹	4	PHYS 3600	4	Co-op	0
		PHYS elective	4	Elective	4		
		PHIL 4505 or PHIL 4500	4				
		PHIL elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602	4	Elective	4	Co-op	0
		PHIL 4510	4	Elective	4		
		PHIL elective	4				
		ENGW 3307	4				
	0		16		8		0

Total Hours: 132

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	PHIL 2325	4				
PHIL 1115 or 1215	4	PHIL 2330	4				
ENGW 1111	4						
	18		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303	4	PHYS 2305	4	PHYS 3600	4	Co-op	0
PHYS 2371	3	PHYS 3601 ¹	4	Elective	4		

PHYS 2372	1	PHIL elective	4				
PHIL elective	4	PHIL elective	4				
PHIL elective	4	EESC 2000	1				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602	4	ENGW 3307	4	Co-op	0
		PHYS elective	4	Elective	4		
		PHIL 4505 or PHIL 4500	4				
		PHIL 4510	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	PHYS 5115	4
		PHIL advanced elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 132

¹ PHYS 3601 offered spring and fall (even years)**Chemical Engineering and Physics, BSCE**

This intercollege combined major serves students who would like to explore their interest in physics while earning the benefit of a Bachelor of Science degree in chemical engineering. Upon completion, the successful student will understand the fundamental physics behind many chemical-based processes, resulting in the ability to design and practice in the field of engineering that deals with the movement of mass, heat transfer, and reactions involved in the processing of various materials.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum required in CHME courses

Mathematics/Science Requirement

Complete 47 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	5
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	5
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
PHYS 3601	Classical Dynamics	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5318	Principles of Experimental Physics	4

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement:	1
GE 1502	Cornerstone of Engineering 2

Advanced Science Requirement

Complete 18 semester hours in advanced chemistry as indicated below.

Code	Title	Hours
CHEM 2311 and CHEM 2312 and CHEM 2319	Organic Chemistry 1 and Lab for CHEM 2311 and Recitation for CHEM 2311	5
PHYS 2303	Modern Physics	4
PHYS 5115	Quantum Mechanics	4
Complete one of the following:		5
CHEM 2313 and CHEM 2314 and CHEM 2320	Organic Chemistry 2 and Lab for CHEM 2313 and Recitation for CHEM 2313	
CHEM 2317 and CHEM 2318 and CHEM 2325	Organic Chemistry 2 for Chemistry Majors and Lab for CHEM 2317 and Recitation for CHEM 2317	

Engineering

Complete 54 semester hours in engineering as indicated below.

Code	Title	Hours
Required Engineering		
PHYS 3600	Advanced Physics Laboratory	4
CHME 2308	Conservation Principles in Chemical Engineering	4
CHME 2310	Transport Processes 1	4
CHME 2320	Chemical Engineering Thermodynamics 1	4
CHME 3312	Transport Processes 2 and Separations	4

CHME 3315	Chemical Engineering Experimental Design 1	4
CHME 3322	Chemical Engineering Thermodynamics 2	4
CHME 4315	Chemical Engineering Experimental Design 2	4
CHME 4510	Chemical Engineering Kinetics	4
CHME 4701	Capstone Design 1: Process Analysis	4
CHME 4703	Capstone Design 2: Chemical Process Design	4

Advanced Engineering Elective

Complete one course numbered between 4000 and 5999 in any of the following subject areas:

CHME, CIVE, EECE, ME, IE, MEIE, and ENGR

Supplemental Credit

3 semester hours from the following course count toward the engineering requirement:

GE 1501 Cornerstone of Engineering 1

3 semester hours from the following course count toward the engineering requirement:

GE 1502 Cornerstone of Engineering 2

Professional Development

Complete 4 semester hours in professional development as indicated below.

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
CHME 2000	Introduction to Engineering Co-op Education	1
CHME 3000	Professional Issues in Engineering	1

Additional Required Courses

The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Writing Requirement and NUPATH Courses

Code	Title	Hours
Writing		
A grade of C or higher is required:		
ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPATH Requirements Through General Electives

NUPATH requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 1151	4	CHME 2308	4	MATH 2321	4	Vacation	0
CHEM 1153	0	GE 1502 (ER)	4	PHYS 1155 (ND)	3		
ENGW 1111 (WF)	4	MATH 1342 (FQ)	4	PHYS 1156 (AD)	1		
GE 1000	1	PHYS 1151 (ND)	3	PHYS 1157	1		
GE 1501	4	PHYS 1152 (AD)	1				
MATH 1341 (FQ)	4	PHYS 1153	1				
	17		17		9		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CHEM 2311	4	CHEM 2313 and CHEM 2314 and CHEM 2320	5	General elective (online course or advanced placement)	4	Co-op	0
CHEM 2312	1	CHME 2000	1				
CHEM 2319	0	CHME 2310	4				
CHME 2320	4	CHME 3322	4				
PHYS 2371 (ND)	3	PHYS 2303 (ND)	4				
PHYS 2372 (EI)	1						
MATH 2341	4						
	17		18		4		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3312	4	PHYS 3600 (ND, AD, WI)	4	Co-op	0
		CHME 3315	4	General elective	4		
		ENGW 3315	4				
		PHYS 3601	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CHME 3000	1	Vacation	0	Co-op	0
		CHME 4315	4				
		CHME 4510	4				

	CHME 4701	4		
	PHYS 3602	4		
	0	17	0	0
Year 5				
Fall	Hours	Spring	Hours	
Co-op	0	CHME 4703 (EI, CE)	4	
		PHYS 5115 (ND, FQ)	4	
		PHYS 5318 (ND, AD, CE)	4	
		Advanced engineering elective	4	
	0		16	

Total Hours: 139

Computer Engineering and Physics, BSCompE

This intercollege dual major serves students who would like to explore their interest in physics while earning the benefit of an accredited Bachelor of Science degree in engineering. The dual major combines a major in physics from the Department of Physics in the College of Arts and Sciences with the Bachelor of Science in Computer Engineering degree from the Department of Electrical and Computer Engineering.

Because of the large body of shared knowledge between computer engineering and physics, an integrated dual major between these two disciplines is a logical course of study and can be accomplished within a student's usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have studied both the physical fundamentals and computer systems.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Physics as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in EECE courses

Engineering

Complete 48 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Computer Engineering Fundamentals		
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	5
EECE 2540	Fundamentals of Networks	4
EECE 2560	Fundamentals of Engineering Algorithms	4
Electrical Engineering Fundamentals		
If more than one electrical engineering fundamentals course is taken, it can count as a technical elective.		
Complete one of the following:		4
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	
EECE 2520	Fundamentals of Linear Systems	
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
Technical Electives		
One CS course from the following approved list may be taken toward the EECE technical elective requirement:		8
EECE 2750	Enabling Engineering	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
EECE 2412 to EECE 2530		
EECE 3324 to EECE 4698		
EECE 5155 to EECE 5698		
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
CS 2550	Foundations of Cybersecurity	
CS 3200	Database Design	
CS 3500	Object-Oriented Design	
CS 4850	Building Game Engines	
CS 3540 to CS 3800		
CS 4100 to CS 4770		
IS 4200 to IS 4700		
Supplemental Credit		
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Mathematics/Science

Complete 63 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 3081	Probability and Statistics	4
Complete one of the following:		5
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
Complete one of the following:		5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 2303	Modern Physics	4
PHYS 2305	Thermodynamics and Statistical Mechanics	4
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3602	Electricity and Magnetism	4
PHYS 5115	Quantum Mechanics	4
Advanced Physics Elective		
Complete one of the following:		4
MATH 4606	Mathematical and Computational Methods for Physics	
PHYS 3600 to PHYS 7999		
Supplemental Credit		
1 semester hour from the following course counts toward the mathematics/science requirement:		1
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1

Additional Required Courses

One credit hour from the following course counts toward the engineering requirement: 1

GE 1501 Cornerstone of Engineering 1

Integrative Requirement

The following course, which counts toward the engineering requirement above, is an integrative course:

Code	Title	Hours
EECE 4790	Electrical and Computer Engineering Capstone 1	4

Writing Requirement and NUpath Courses

Code	Title	Hours
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Writing

A grade of C or higher is required:

ENGW 1111	First-Year Writing	4
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements through general electives.

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1165 (ND)	4				
CHEM 1153	0	PHYS 1166 (AD)	1				
PHYS 1161 (ND)	4	GE 1502 (ER)	4				
PHYS 1162 (AD)	1						
GE 1000	1						
GE 1501	4						

ENGW 1111 (WF)	4				
	22	13	0	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	PHYS 2305 (ND)	4	Vacation	0	Co-op	0
MATH 2341	4	EECE 2000	1				
PHYS 2303 (ND)	4	EECE 2150	5				
EECE 2160	4	CE fundamentals	4				
		CS 1800 (FQ)	4				
		CS 1802	1				
	16		19		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 (ND)	4	PHYS 3600 (ND, AD< WI)	4	Co-op	0
		EE fundamentals	4	General elective	4		
		CE fundamentals	5				
		ENGW 3302 (WD)	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 5115 (ND, FQ)	4	EECE 4790 (EI, WI, CE)	4	Co-op	0
		EECE 3000	1	EECE technical elective	4		
		CE fundamentals	4				
		MATH 3081 (AD)	4				
		General elective	4				
	0		17		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	EECE 4792 (EI, WI, CE)	4
		EECE technical elective	4
		PHYS advanced elective	4
	0		12

Total Hours: 132

Electrical Engineering and Physics, BSEE

This intercollege combined major serves students who would like to explore their interest in physics while earning the benefit of an accredited Bachelor of Science degree in engineering. The major combines a major in physics from the Department of Physics in the College of Science with the Bachelor of Science in Electrical Engineering degree from the Department of Electrical and Computer Engineering.

Because of the large body of shared knowledge between electrical engineering and physics, a combined major between these two disciplines is a logical course of study and can be accomplished within a student's usual five-year program (including three co-op placements) without requiring course overloading in any semester. A student graduating from this program will have studied both the physical fundamentals and the applications of electronic devices and systems. The program is a particularly appropriate course of study for students who wish to pursue a career in solid-state devices, microelectromechanical systems, or nanotechnology.

Students interested in this program should contact the Department of Electrical and Computer Engineering or the Department of Physics as early as possible, preferably prior to registering for freshman courses.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in EECE courses

Engineering

Complete 51 semester hours in engineering as indicated below.

Code	Title	Hours
Required Courses		
EECE 2150	Circuits and Signals: Biomedical Applications	5
EECE 2160	Embedded Design: Enabling Robotics	4
Electrical Engineering Fundamentals		
EECE 2412 and EECE 2413	Fundamentals of Electronics and Lab for EECE 2412	5
EECE 2520	Fundamentals of Linear Systems	4
EECE 2530 and EECE 2531	Fundamentals of Electromagnetics and Lab for EECE 2530	5
Computer Engineering Fundamentals		
If more than one computer engineering fundamentals course is taken, it can count as a technical elective.		
Complete one of the following:		4-5

EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 2540	Fundamentals of Networks	
EECE 2560	Fundamentals of Engineering Algorithms	
Capstone Courses		
EECE 4790	Electrical and Computer Engineering Capstone 1	4
EECE 4792	Electrical and Computer Engineering Capstone 2	4
EECE Technical Electives		
Complete two of the following:		8-9
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 4991	Research	
EECE 4992	Directed Study	
EECE 4993	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
GE 4608	Nanotechnology in Engineering	
EECE 2540 to EECE 2750		
EECE 3324 to EECE 3410		
EECE 4512 to EECE 4698		
EECE 5155 to EECE 5698		
Supplemental Credit		
2 semester hours from the following course count toward the engineering requirement:		2
EECE 3468	Noise and Stochastic Processes	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1501	Cornerstone of Engineering 1	
3 semester hours from the following course count toward the engineering requirement:		3
GE 1502	Cornerstone of Engineering 2	

Professional Development

Code	Title	Hours
Required Professional Development		
GE 1000	Introduction to the Study of Engineering	1
EECE 2000	Introduction to Engineering Co-op Education	1
EECE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Mathematics/Science

Complete 57 semester hours in mathematics and science as indicated below.

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4

MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4

Complete one of the following: 5

PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
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PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
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Complete one of the following: 5

PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
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PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
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PHYS 2303	Modern Physics	4
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PHYS 2305	Thermodynamics and Statistical Mechanics	4
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PHYS 3600	Advanced Physics Laboratory	4
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PHYS 3602	Electricity and Magnetism	4
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PHYS 5115	Quantum Mechanics	4
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Advanced Physics Elective

Complete one of the following: 4

MATH 4606	Mathematical and Computational Methods for Physics	
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PHYS 3600 to PHYS 7999

Supplemental Credit

2 semester hours from the following course count toward the mathematics/science requirement: 2

EECE 3468	Noise and Stochastic Processes	
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1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1502	Cornerstone of Engineering 2	
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Writing Requirement and NUpath Courses

Code	Title	Hours
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Writing

A grade of C or higher is required:

ENGW 1111	First-Year Writing	4
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ENGW 3302	Advanced Writing in the Technical Professions	4
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or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	
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NUpath Requirements through General Electives

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Required General Electives

Code	Title	Hours
	Complete three academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.	12

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

132 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1165 (ND)	4				
CHEM 1153	0	PHYS 1166 (AD)	1				
PHYS 1161 (ND)	4	GE 1502 (ER)	4				
PHYS 1162 (AD)	1						
GE 1000	1						
GE 1501	4						
ENGW 1111 (WF)	4						
	22		13		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	PHYS 2305 (ND)	4	Vacation	0	Co-op	0
MATH 2341	4	EECE 2160	4				
EECE 2150	5	EE fundamentals	4				
PHYS 2303 (ND)	4	EECE 2000	1				
		General elective	4				
	17		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 (ND)	4	PHYS 3600 (ND, AD, WI)	4	Co-op	0
		CE fundamentals	4	General elective	4		
		EE fundamentals	5				
		ENGW 3302 (WD)	4				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	EECE 3468	4	EECE 4790 (EI, WI, CE)	4	Co-op	0
		PHYS 5115 (ND, FQ)	4	EECE technical elective	4		
		EECE technical elective	4				
		EE fundamentals	5				
		EECE 3000	1				
		0		18		8	
						0	

Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	EECE 4792 (EI, WI, CE)	4		
		PHYS advanced elective	4		
		General elective	4		
		0		12	

Total Hours: 132

Mechanical Engineering and Physics, BSME

This undergraduate program takes advantage of the physical similarities between mechanical engineering and physics, providing students with the opportunity to pursue studies that explore both topics. The program culminates with mechanical engineering capstone design.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Major GPA Requirement

2.000 minimum GPA required in IE, ME, and MEIE courses

Engineering Requirement

Complete 60 semester hours in engineering as indicated below:

Code	Title	Hours
Required Engineering		
ME 2340 and ME 2341	Introduction to Material Science and Lab for ME 2340	5
ME 2350	Engineering Mechanics and Design	4

ME 2355 and ME 2356	Mechanics of Materials and Lab for ME 2355	5
ME 2380	Thermodynamics	4
ME 3455 and ME 3456	Dynamics and Vibrations and Lab for ME 3455	5
ME 3475 or ME 3480	Fluid Mechanics International Applications of Fluid Mechanics	4
ME 4505 and ME 4506	Measurement and Analysis with Thermal Science Application and Lab for ME 4505	5
ME 4508	Mechanical Engineering Computation and Design	4
ME 4550	Mechanical Engineering Design	4
ME 4555	System Analysis and Control	4
ME 4570	Thermal Systems Analysis and Design	4
MEIE 4701	Capstone Design 1	1
MEIE 4702	Capstone Design 2	5

Supplemental Credit

3 semester hours from the following course counts toward the engineering requirement: 3

GE 1501 Cornerstone of Engineering 1

3 semester hours from the following course counts toward the engineering requirement: 3

GE 1502 Cornerstone of Engineering 2

Professional Development Requirement

Code	Title	Hours
Professional Development		
GE 1000	Introduction to the Study of Engineering	1
MEIE 2000	Introduction to Engineering Co-op Education	1
MEIE 3000	Professional Issues in Engineering	1
Additional Required Courses		
The remaining credit from the following course will apply to the professional development area:		1
GE 1501	Cornerstone of Engineering 1	

Mathematics/Science Requirement

Complete 59 semester hours in mathematics and science as indicated below:

Code	Title	Hours
Required Mathematics/Science		
CHEM 1151 and CHEM 1153	General Chemistry for Engineers and Recitation for CHEM 1151	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	5
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	5
PHYS 2303	Modern Physics	4
PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4

PHYS 3602	Electricity and Magnetism	4
PHYS 3600	Advanced Physics Laboratory	4
PHYS 3601	Classical Dynamics	4
PHYS 5318	Principles of Experimental Physics	4

Advanced Physics Elective

Complete one 4-semester-hour course in the following range: 4
PHYS 3600 to PHYS 5999

Supplemental Credit

1 semester hour from the following course counts toward the mathematics/science requirement: 1

GE 1502	Cornerstone of Engineering 2	
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Writing Requirement and NUPATH Courses

Code	Title	Hours
Writing		
ENGW 1111	First-Year Writing (a grade of C or higher is required)	4
ENGW 3302	Advanced Writing in the Technical Professions (a grade of C or higher is required)	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

NUPATH Requirements through General Electives

NUPATH requirements Interpreting Culture (IC), Societies and Institutions (SI), and Differences and Diversity (DD) are not explicitly satisfied by required engineering courses. Students are responsible for satisfying these requirements with general electives.

Integrative Requirement

Principles of Experimental Physics (PHYS 5318) is part of the mathematics/science requirement above and is an integrative course.

Code	Title	Hours
PHYS 5318	Principles of Experimental Physics	4

Required General Electives

Complete two academic, nonremedial, nonrepetitive courses, each equivalent to 4 semester hours.

Course Work That Does Not Count Toward the Engineering Degree

Students in engineering are allowed to count a maximum of two pass/fail courses toward their degree program. Only general electives outside the College of Engineering may be taken on a pass/fail grading basis. A maximum of one pass/fail course is allowed per semester.

Program Requirement

139 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1341 (FQ)	4	MATH 1342 (FQ)	4	Vacation	0	Vacation	0
CHEM 1151	4	PHYS 1165 (ND)	4				

CHEM 1153	0	PHYS 1166 (AD)	1				
PHYS 1161 (ND)	4	GE 1502 (ER)	4				
PHYS 1162 (AD)	1	ENGW 1111 (WF)	4				
GE 1000	1						
GE 1501	4						
	18		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 2321 (FQ)	4	PHYS 2303 (ND)	4	Vacation	0	Co-op	0
MATH 2341	4	MEIE 2000	1				
PHYS 2371 (ND)	3	ME 2340 (WI)	4				
PHYS 2372 (EI)	1	ME 2341	1				
ME 2350	4	ME 2355	4				
		ME 2356	1				
		ME 2380	4				
	16		19		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602 (ND)	4	ME 3475	4	Co-op	0
		ME 3455	4	PHYS 3600 (ND, AD, WI)	4		
		ME 3456	1				
		ME 4508	4				
		ENGW 3302 (WD)	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601 (ND)	4	ME 4550	4	Co-op	0
		MEIE 3000	1	MEIE 4701 (EI, WI, CE)	1		
		ME 4505 (AD)	4	General elective	4		
		ME 4506	1				
		ME 4555	4				
		ME 4570	4				
	0		18		9		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	MEIE 4702 (EI, WI, CE)	5
		PHYS 5318 (ND, AD, CE)	4
		PHYS advanced elective	4

General elective	4
0	17

Total Hours: 139

Physics, Minor

The physics minor provides a foundation in classical and modern physics and allows students to explore more advanced topics in physics through elective choices.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Complete one of the following sequences:		10

Physics 1 and 2

PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161
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PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165
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Physics for Engineering 1 and 2

PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151
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PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155
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Modern Physics

Code	Title	Hours
PHYS 2303	Modern Physics	4

Elective Courses

Code	Title	Hours
Complete two of the following:		8

MATH 4606	Mathematical and Computational Methods for Physics
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PHYS 2300 to PHYS 5999

GPA Requirement

2.000 GPA required in the minor

Psychology

Website (<http://www.northeastern.edu/psychology>)

Joanne L. Miller, PhD

Matthews Distinguished University Professor and Chair

125 Nightingale Hall

617.373.3076

617.373.8714 (fax)

Maribel Pereira, Administrative Secretary, m.pereira@northeastern.edu

Studies in modern psychology focus on mind, brain, and behavior. Based on empirical research with both humans and animals, psychologists investigate and seek explanations for the behavior and mental life of individuals and develop assessment tools and treatment options for addressing clinical problems.

The psychology curriculum explores such topics as how brain function determines behavior; how we see, hear, and learn; what constitutes normal and abnormal personality; the nature of language and cognitive processing; how emotions affect behavior; and how individuals work in groups. Through laboratory practice and experimentation, individual research projects, and small-group seminars, the program provides the opportunity for critical evaluation and in-depth exploration across the diverse topic areas that constitute modern psychology.

Students are eligible for directed study courses, which are individualized research experiences under the supervision of a faculty member. The department also offers honors sections of various courses. Co-op placements are varied and include both community (often mental health) and laboratory settings, depending on a student's interests.

A solid scientific background in psychology helps prepare students for academic careers in teaching and research, as well as professional careers in business, public and social services, education, mental health, law, and medicine. It also provides a strong foundation for graduate study in all areas of psychology, including clinical programs.

Note: A double major in psychology and behavioral neuroscience is not offered due to the similarity in the course curricula of these majors.

Programs

Bachelor of Science (BS)

- Psychology (p. 603)
- American Sign Language and Psychology (p. 611)
- Business Administration and Psychology (p. 231)
- Computer Science and Cognitive Psychology (p. 301)
- Criminal Justice and Psychology (p. 612)
- Information Science and Cognitive Psychology (p. 360)
- Linguistics and Psychology (p. 509)

Minor

- Psychology (p. 621)

Psychology, BS

The Bachelor of Science degree program in psychology is designed to provide a research-based undergraduate education for students with a broad range of interests in psychology. Psychology majors engage in academic course work and other experiences that span the breadth of psychology, as well as in-depth explorations that meet their own specific interests. By its very nature, psychology is a wide-ranging, cross-cutting field of study, and we encourage and offer interdisciplinary explorations via a highly flexible interdisciplinary cluster of courses that counts toward the BS curriculum, strong ties to other departments and programs, and experiential education to enhance the learning process, including conducting research in faculty laboratories and participation in Northeastern's co-op program.

Academic Progression Standards

Students who fail to maintain a minimum grade-point average of 2.000 will be placed on probation. Three consecutive academic terms on probation will result in dismissal from the major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Psychology Major Requirements

Code	Title	Hours
Introductory Course		
PSYC 1101	Foundations of Psychology	4
Personal/Social Bases of Behavior (Area A)		
Complete two of the following:		8
PSYC 3400	Personality	
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
Biological/Cognitive Bases of Behavior (Area B)		
Complete two of the following:		8
PSYC 3450	Learning and Motivation	
or PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 3464	Psychology of Language	
PSYC 3466	Cognition	
Statistics		
PSYC 2320	Statistics in Psychological Research	4
Psychology Seminar		
Complete one of the following:		4
PSYC 4650	Seminar in Clinical Case Study	
PSYC 4654	Seminar in Behavioral Modification	
PSYC 4656	Seminar in Biological Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4662	Seminar in Personality	
PSYC 4664	Seminar in Social Psychology	
PSYC 4666	Seminar in Clinical Psychology	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
PSYC 4678	Seminar in Social and Affective Neuroscience	
Lab Requirement		
Complete two psychology lab courses OR one psychology lab course and one psychology directed study research or honors thesis:		8
Lab		
PSYC 4600	Laboratory in Research Design	

PSYC 4606	Laboratory in Biological Psychology
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4614	Laboratory in Social Psychology
PSYC 4616	Laboratory in Personality
PSYC 4622	Laboratory in Sensation and Perception
PSYC 4624	Laboratory in Affective Science
PSYC 4626	Laboratory in Life-Span Emotional Development
PSYC 4628	Laboratory in Developmental Psychology

Directed Study Research or Honors Thesis

PSYC 4991	Directed Study Research
or PSYC 4971	Junior/Senior Honors Project 2

Psychology Required Electives

Code	Title	Hours
Complete five PSYC courses.		20

Supporting Courses

INTERDISCIPLINARY CLUSTER

Code	Title	Hours
Complete three of the following courses. Choose from one group only. Students may petition to create their own interdisciplinary cluster.		11-15

Educational Psychology

SOCL 1290	Juvenile Delinquency
EDUC 4530	Race and Urban Education
EDUC 5570	Inclusion, Equity, and Diversity
EDUC 4552	Inquiry in the Humanities and Social Sciences at the Elementary Level
EDUC 1111	Education in the Community
EDUC 4570	Inclusion, Equity, and Diversity
EDUC 5503	Culture, Equity, Power, and Influence
EDUC 5504	Child and Adolescent Development, Learning, and Teaching

Society and Psychology

ANTH 1101	Peoples and Cultures
ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective
ANTH 2315	Religion and Modernity
LING 3412	Language and Culture
SOCL 1241	Sociology of Violence
SOCL 1255	Sociology of the Family
SOCL 1260	Gender in a Changing Society
SOCL 1285	Deviant Behavior and Social Control
SOCL 1290	Juvenile Delinquency
SOCL 1295	Drugs and Society

Forensic Psychology

CHEM 1107	Introduction to Forensic Science
CRIM 2200	Criminology
CRIM 4010	Gender, Crime, and Justice
CRIM 4020	Race, Crime, and Justice
CRIM 4710	Law and Psychology

Cross-Cultural Psychology

ANTH 1101	Peoples and Cultures
LING 3412	Language and Culture
LING 3442	Sociolinguistics
Expressive Therapy	
MUSC 1118	Music Therapy 1
THTR 1130	Introduction to Acting
ARTF 1121	Conceptual Drawing
Counseling and Applied Psychology	
CAEP 3480	Counseling Theories and Practice
CAEP 3485	Mental Health and Counseling
HUSV 2300	Counseling in Human Services
HUSV 3520	Child Intervention and Treatment
Artificial Intelligence and Information Science	
CS 3800	Theory of Computation
CS 4100	Artificial Intelligence
CS 4120	Natural Language Processing
IS 2000	Principles of Information Science
IS 4300	Human Computer Interaction
Language	
DEAF 2700	ASL Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3456	Language and Gender
LING 3422	Phonology
LING 3434	Bilingualism
LING 3412	Language and Culture
LING 3442	Sociolinguistics
SLPA 1205	Speech and Hearing Science
Human Factors	
IS 2000	Principles of Information Science
IS 3500	Information System Design and Development
IS 4200	Information Retrieval
IS 4300	Human Computer Interaction
IS 4800	Empirical Research Methods
Child and Adolescent Abnormal Psychology	
CRIM 3200	Youth Crime and Justice
HUSV 3520	Child Intervention and Treatment
HUSV 3580	Sexual Violence: Counseling, Programs, and Policy
SOCL 1290	Juvenile Delinquency
SOCL 1295	Drugs and Society
Human Resource Management and Business	
ORGB 3201	Organizational Behavior
INTB 3310	Cultural Aspects of International Business
MISM 2301	Management Information Systems
MKTG 2209	Introduction to Marketing
PHIL 1170	Business Ethics
SOCL 1280	The 21st-Century Workplace
Philosophy of Science and Psychology	
PHIL 1105	Science and Pseudoscience
PHIL 1115	Introduction to Logic

PHIL 4510	Philosophy of Science
PHIL 4535	Philosophy of Mind
Ethics	
PHIL 1130	Ethics: East and West
PHIL 1165	Moral and Social Problems in Healthcare
PHIL 1170	Business Ethics
PHIL 1180	Environmental Ethics
PHIL 3435	Moral Philosophy
Biological and Chemical Sciences	
BIOL 1141	Microbes and Society
BIOL 1147	The Human Organism
BIOL 1149	Biology of Human Reproduction
EEMB 1450	Introduction to Marine Biology
CHEM 1101	General Chemistry for Health Sciences and Lab for CHEM 1101
CHEM 1104	Organic Chemistry for Health Sciences and Lab for CHEM 1104
CHEM 1105	and Lab for CHEM 1104
CHEM 1211	General Chemistry 1 and Lab for CHEM 1211
CHEM 1212	and Lab for CHEM 1211
CHEM 1214	General Chemistry 2 and Lab for CHEM 1214
CHEM 1215	and Lab for CHEM 1214
BIOL 1111	General Biology 1 and Lab for BIOL 1111
BIOL 1112	and Lab for BIOL 1111
BIOL 1113	General Biology 2 and Lab for BIOL 1113
BIOL 1114	and Lab for BIOL 1113
BIOL 1117	Integrated Anatomy and Physiology 1 and Lab for BIOL 1117
BIOL 1118	and Lab for BIOL 1117
BIOL 1119	Integrated Anatomy and Physiology 2 and Lab for BIOL 1119
BIOL 1120	and Lab for BIOL 1119
BIOL 3403	Animal Behavior
BIOL 3405	Neurobiology
EEMB 2302	Ecology
EEMB 5548	Sociobiology
BIOL 5585	Evolution
CHEM 1107	Introduction to Forensic Science
Physical Sciences and Mathematics	
In addition to the following courses, any math skill course may be used with advisor approval:	
ENVR 1120	Oceans and Coasts
ENVR 1112	Environmental Geology
ENVR 1101	Environmental Science
ENVR 1110	Global Climate Change
ENVR 1200	Dynamic Earth
ENVR 3418	Geophysics
MATH 2310	Discrete Mathematics
MATH 4581	Statistics and Stochastic Processes
or any PHYS course	
Health and Wellness	
NRSG 1205	Wellness
HSCI 1105	Human Nutrition
HSCI 1106	Contemporary Issues in Nutrition
HSCI 5230	Clinical Nutrition Applications in Health and Disease

BIOL 1117 and BIOL 1119	Integrated Anatomy and Physiology 1 and Integrated Anatomy and Physiology 2
BIOL 1141	Microbes and Society
BIOL 1143	Biology and Society
BIOL 1147	The Human Organism
BIOL 1149	Biology of Human Reproduction
PT 1880	Introduction to Sports Medicine
COMM 3201	Health Communication
PHIL 1165	Moral and Social Problems in Healthcare
PHIL 1185	The Ethics of Food
PHIL 1180	Environmental Ethics
SOCL 1120	Society and Health
SOCL 1295	Drugs and Society

Communication, Culture, and Society

COMM 2304	Communication and Gender
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics
COMM 1131	Sex, Relationships, and Communication
COMM 1255	Communication in a Digital Age
COMM 3304	Communication and Inclusion
COMM 2105	Social Networks
COMM 2551	Free Speech in Cyberspace
COMM 3230	Interpersonal Communication
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4625	Online Communities
LING 3412	Language and Culture
LING 3442	Sociolinguistics
LING 3456	Language and Gender

MATHEMATICS REQUIREMENT

Code	Title	Hours
Complete one of the following courses:		4
CS 1800	Discrete Structures	
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
MATH 1242	Calculus 2	
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1252	Calculus and Differential Equations for Biology 2	
MATH 1340	Intensive Calculus for Engineers	
MATH 1341	Calculus 1 for Science and Engineering	
MATH 1342	Calculus 2 for Science and Engineering	

BS in Psychology Major Credit Requirements

Complete 68 semester hours in the major. A maximum of 34 semester hours of transfer credit is allowed in the major. *Note:* Up to 12 semester

hours of psychology-related electives will count toward the major *only after* the "Interdisciplinary Cluster" section has been completed.

Program Requirement

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 1101	4	PSYC area A elective	4	Vacation	4	Vacation	0
ENGW 1111	4	PSYC elective	4				
Math requirement	4	Elective	4				
PSYC 1214 (or other PSYC elective)	4	Elective	4				
PSYC 1000	1						
		17	16	0	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 2320	4	PSYC area A elective	4	Vacation	4	Co-op	0
PSYC area B elective	4	PSYC area B elective	4				
Elective	4	PSYC interdisciplinary cluster	4				
Elective	4	Elective	4				
		EESC 2000	1				
		16	17	0	0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PSYC elective	4	Elective	4	Co-op	0
		PSYC lab elective	4	Elective	4		
		ENGW 3315	4				
		Elective	4				
		0	16	8	0		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PSYC lab elective	4	Elective	4	Co-op	0
		PSYC elective	4	Elective	4		
		PSYC interdisciplinary cluster	4				
		Elective	4				
		0	16	8	0		

Year 5

Fall	Hours	Spring	Hours
Co-op	0	PSYC seminar elective	4
		PSYC interdisciplinary cluster	4
		PSYC elective	4
		Elective	4
	0		16

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 1101	4	PSYC area A elective	4	Vacation	0	Vacation	0
ENGW 1111	4	PSYC elective	4				
Math requirement	4	Elective	4				
PSYC 1214 (or other PSYC elective)	4	Elective	4				
PSYC 1000	1						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 2320	4	Co-op	0	Co-op	0	Elective	4
PSYC area B elective	4					Elective	4
Elective	4						
Elective	4						
EESC 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC area A elective	4	Co-op	0	Co-op	0	Elective	4
PSYC area B elective	4					Elective	4
ENGW 3315	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC lab elective	4	Co-op	0	Co-op	0	Vacation	0
PSYC elective	4						
PSYC interdisciplinary cluster	4						

Elective	4			
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	16	0	0	0
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Year 5

Fall	Hours	Spring	Hours
PSYC lab elective	4	PSYC seminar elective	4
PSYC elective	4	PSYC elective	4
PSYC interdisciplinary cluster	4	PSYC interdisciplinary cluster	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Four Years, Two Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 1101	4	PSYC area A elective	4	PSYC elective	4	Vacation	0
ENGW 1111	4	PSYC elective	4	Elective	4		
Math requirement	4	Elective	4				
PSYC 1214 (or other PSYC elective)	4	Elective	4				
PSYC 1000	1						
	17		16		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 2320	4	PSYC area A elective	4	Elective (or AP credit, etc.)	4	Co-op	4
PSYC area B elective	4	PSYC area B elective	4	Elective (or AP credit, etc.)	4		
PSYC elective	4	PSYC elective	4				
PSYC interdisciplinary cluster	4	PSYC interdisciplinary cluster	4				
EESC 2000	1						
	17		16		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PSYC lab elective	4	Elective (or AP credit, etc.)	4	Co-op	4
		ENGW 3315	4	Elective (or AP credit, etc.)	4		
		PSYC interdisciplinary cluster	4				

		Elective	4				
		0	16	8			0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		PSYC lab elective	4	Elective	4	Vacation	
		PSYC seminar elective	4	Elective	4		
		Elective	4				
		Elective	4				
		0	16	8			0

Total Hours: 130

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 1101	4	PSYC area A elective	4	PSYC elective	4	Vacation	
ENGW 1111	4	PSYC elective	4	Elective	4		
Math requirement	4	Elective	4				
PSYC 1214 (or other PSYC elective)	4	Elective	4				
PSYC 1000	1						
		17	16	8			0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 2320	4	Co-op		Co-op		Elective (or AP credit, etc.)	4
PSYC area B elective	4					Elective (or AP credit, etc.)	4
PSYC elective	4						
PSYC interdisciplinary cluster	4						
EESC 2000	1						
		17	0	0			8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC area A elective	4	Co-op		Co-op		Elective (or AP credit, etc.)	4
PSYC area B elective	4					Elective (or AP credit, etc.)	4
PSYC interdisciplinary cluster	4						
Elective	4						
		16	0	0			8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC lab	4	PSYC lab elective	4	Elective	4	Vacation	
ENGW 3315	4	PSYC seminar elective	4	Elective	4		
PSYC interdisciplinary cluster	4	Elective	4				
PSYC elective	4	Elective	4				
		16	16	8			0

Total Hours: 130

Business Administration and Psychology, BS

This combined major educates students in business and psychology and the interface between the two disciplines. The scope and sequence of psychology courses provide students with a foundation in the interdisciplinary science of psychology, including statistics and research, social psychology, developmental psychology, cognition, and personality. Business courses provide a foundation in accounting, innovation, marketing, management, and organizational behavior, with the opportunity to concentrate in a specific area of business. Students completing this program should be able to understand the relationships between these fields that pertain to explaining and addressing human behavior and business practices.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Business Requirements

Code	Title	Hours
Required Courses		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
ENTR 2301	Innovation!	4
FINA 2201	Financial Management	4
INTB 1203	International Business and Global Social Responsibility	4
MISM 2301	Management Information Systems	4
or SCHM 2301	Supply Chain and Operations Management	
MKTG 2201	Introduction to Marketing	4
ORGB 3201	Organizational Behavior	4
STRT 4501	Strategy in Action	4

Supporting Courses for Business

ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
MATH 1231	Calculus for Business and Economics	4

Business Concentration

Complete one of the following concentrations. Requirements for the concentrations are listed below (p. 233).

- Accounting (p. 233)
- Entrepreneurship and Innovation (p. 233)
- Finance (p. 233)
- Management (p. 234)
- Management Information Systems (p. 234)
- Marketing (p. 234)
- Supply Chain Management (p. 234)

Psychology Requirements

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
or MGSC 2301	Business Statistics	
PSYC 3402	Social Psychology	4
PSYC 3466	Cognition	4
PSYC 3400	Personality	4
PSYC 3404	Developmental Psychology	4
Required Seminar		
Complete one of the following:		4
PSYC 4650	Seminar in Clinical Case Study	
PSYC 4654	Seminar in Behavioral Modification	
PSYC 4656	Seminar in Biological Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4662	Seminar in Personality	
PSYC 4664	Seminar in Social Psychology	
PSYC 4666	Seminar in Clinical Psychology	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
PSYC 4678	Seminar in Social and Affective Neuroscience	
Required Lab		
Complete one of the following:		4
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4614	Laboratory in Social Psychology	
PSYC 4616	Laboratory in Personality	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4624	Laboratory in Affective Science	
PSYC 4626	Laboratory in Life-Span Emotional Development	
PSYC 4628	Laboratory in Developmental Psychology	

Psychology Electives		
Complete two PSYC courses not used to fulfill the requirements above:		8
PSYC 1001 to PSYC 5999		

Supporting Courses

Code	Title	Hours
Introduction to College		
BUSN 1102	Personal Skill Development for Business	1
or PSYC 1000	Psychology at Northeastern	
Co-op Preparation		
Complete one of the following:		1-5
BUSN 1101 and BUSN 1103	Introduction to Business and Professional Development for Business Co-op	
EESC 2000	Professional Development for Co-op	

Integrative Course

Code	Title	Hours
ORGB 3201	Organizational Behavior	4

Business GPA Requirement

A minimum 2.000 GPA in business courses is required.

Psychology GPA Requirement

A minimum 2.000 GPA in psychology courses is required.

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Program Requirement

128 total semester hours required

Business Concentration

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	

ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	
Introductory Course		
ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	
Capstone Course		
Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	
Electives		
Note: Only one non-ENTR course may be used as an elective.		
Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301	Corporate Finance	4
or FINA 3303	Investments	
Electives		
Complete three of the following:		12
ENTR 3520	Impact Investing and Social Finance	
or FINA 2720	Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	

MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

American Sign Language and Psychology, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		

LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3500	The Interpreting Profession	2
Interpreting		
INTP 3510	Interpreting Inquiry Texts	4

Psychology Requirements

Code	Title	Hours
Psychology		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3466	Cognition	4
Psychology Lab or Directed Study		
Complete one of the following:		4
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4614	Laboratory in Social Psychology	
PSYC 4616	Laboratory in Personality	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4624	Laboratory in Affective Science	
PSYC 4626	Laboratory in Life-Span Emotional Development	
PSYC 4991	Directed Study Research	
Personal/Social Bases of Behavior (Area A)		
Complete two of the following:		8
PSYC 3400	Personality	
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
Biological/Cognitive Bases of Behavior (Area B)		
Complete one of the following:		4
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
Psychology Elective		
Complete one of the following:		4
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4674	Seminar in Cognitive Neuroscience	

Integrative Requirements

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
PSYC 3464	Psychology of Language	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 82 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	MATH 1215	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4	Elective	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0
LING 1150	4	DEAF 2700	4				
DEAF 2500	4	PSYC 2320	4				
Elective	4	PSYC 3464	4				
		16			16	0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 3101	4	PSYC 4524	4	Vacation	0	Vacation	0
Psych Area A elective	4	Psych Area B elective	4				
ENGW 3315	4	Elective	4				
INTP 3510	4	AMSL 3102	4				
		16			16	0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTP 4940	4	Psych lab elective	4				
PSYC 4658	4	Psych Area A elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16			16	0	

Total Hours: 128

Criminal Justice and Psychology, BS

This combined major educates students in criminal justice and psychology and the interface between the two disciplines. The scope and sequence of psychology courses provide students with a foundation in the interdisciplinary science of psychology, including the biological and psychosocial bases of behavior, learning, personality, and cognition. Criminal justice courses provide a foundation for understanding individual and systemic aspects of criminology and criminal justice. Students completing this program should be able to understand the relationships between the fields, as they relate to understanding and addressing criminal behavior.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Requirements

Code	Title	Hours
Criminal Justice Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
Thematic Elective		
Complete one of the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Elective		
Complete one of the following:		4
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
System-Wide Elective		
Complete one of the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4040	Crime Prevention	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Mathematics		
Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Electives

Complete three courses in the following range:	8
CRIM 4000 to CRIM 5999	

Psychology Requirements

Code	Title	Hours
Introductory Course		
PSYC 1101	Foundations of Psychology	4
Statistics		
PSYC 2320	Statistics in Psychological Research	4
Personality/Social Bases of Behavior		
Complete two of the following:		8
PSYC 3400	Personality	
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
Biological/Cognitive Bases of Behavior		
Complete two of the following:		8
PSYC 3450	Learning and Motivation	
or PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 3464	Psychology of Language	
PSYC 3466	Cognition	
Research Experience		
Complete one of the following:		4
PSYC 4991	Directed Study Research	
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4614	Laboratory in Social Psychology	
PSYC 4616	Laboratory in Personality	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4624	Laboratory in Affective Science	
PSYC 4626	Laboratory in Life-Span Emotional Development	
Psychology Seminar		
Complete one of the following:		4
PSYC 4650	Seminar in Clinical Case Study	
PSYC 4654	Seminar in Behavioral Modification	
PSYC 4656	Seminar in Biological Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4662	Seminar in Personality	
PSYC 4664	Seminar in Social Psychology	
PSYC 4666	Seminar in Clinical Psychology	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
PSYC 4678	Seminar in Social and Affective Neuroscience	

Electives

Complete two PSYC courses. 8

Integrative Requirement

Code	Title	Hours
CRIM 3040 or CRIM 4710	Psychology of Crime Law and Psychology	4

Criminal Justice and Psychology Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Computer Science and Cognitive Psychology, BS

The computer science and cognitive psychology combined major provides a foundation in general psychology, psychology of language, cognition, and statistics—all supplemented by an experimental laboratory course, seminar course, and psychology electives. Students who choose this program often have a general interest in human psychology or specific interests in artificial intelligence or human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4100	Artificial Intelligence (Integrative course)	4

CS 4500 and CS 4501	Software Development and Recitation for CS 4500 (Integrative course)	4
IS 4300	Human Computer Interaction (Integrative course)	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, a directed study, research, project study, or appropriate graduate-level course may also be taken as a computer science elective.

Complete twelve credits of CS, IS or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Psychology Courses

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
PSYC 3466	Cognition	4
Advanced Psychology		
PSYC 3452 or PSYC 3458	Sensation and Perception Biological Psychology	4
Laboratory in Psychology		
Complete one of the following:		4
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
Seminar in Psychology		
Complete one of the following:		4
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
Psychology Electives		
Note: Courses satisfying the categories above cannot be reused.		
Complete two of the following:		8
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 4512	Neuropsychology	
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	

PSYC 4628	Laboratory in Developmental Psychology
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4668	Seminar in Sensation and Perception
PSYC 4674	Seminar in Cognitive Neuroscience
PSYC 4676	Seminar in Developmental Psychology
With prior approval, directed study research and Honors Project courses can also be counted:	
PSYC 4970	Junior/Senior Honors Project 1
PSYC 4971	Junior/Senior Honors Project 2
PSYC 4991	Directed Study Research

- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4	
CS 2500 and CS 2501	5	MATH 1341	4			
PSYC 1101	4	Elective	4			
ENGW 1111	4					
		19		17		8
						0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
PSYC 2320	4	CS elective	4	Elective	4	Co-op
CS 3000	4	IS 4300	4	Elective	4	
Elective	4	PSYC elective	4			
PSYC 3464	4	PSYC 3452 or 3458	4			
		CS 1210	1			
		16		17		8
						0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4100	4	Elective	4	Co-op
		PSYC lab elective	4	Elective	4	
		CS elective	4			
		CS elective	4			
		THTR 1170	1			
		0		17		8
						0

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		CS 4500 and CS 4501	4	Elective	4	
		PSYC elective	4	ENGW 3302	4	
		PSYC seminar	4			
		Computing and social issues	4			
		0		16		8

Total Hours: 134

Supporting Courses

Code	Title	Hours
Calculus		
A grade of C– or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	PSYC 3466	4				
CS 2500 and CS 2501	5	Elective	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	PSYC 3464	4	Vacation	0	Co-op	0
MATH 1341	4	CS 3000	4				
PSYC 2320	4	PSYC 3452	4				
Elective	4	CS 1210	1				
		CS elective	4				
	16		17		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4300	4	Elective	4	Co-op	0
		ENGW 3302	4	Elective	4		
		PSYC elective	4				
		CS elective	4				
		THTR 1170	1				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4100	4	Elective	4	Co-op	0
		CS elective	4	Elective	4		
		PSYC lab elective	4				
		PSYC elective	4				
	0		16		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	CS 4500 and CS 4501	4
		PSYC seminar	4
		Computing and social issues	4
		Elective	4
	0		16

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 2500 and CS 2501	5	PSYC 3466	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4	Elective	4				
CS 1200	1						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3500	4	Co-op	0	Co-op	0	Vacation	0
MATH 1341	4						
PSYC 2320	4						
Elective	4						
CS 1210	1						
	17		0		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PSYC 3464	4	Co-op	0	Co-op	0	Elective	4
CS 3000	4					Elective	4
PSYC 3452	4						
THTR 1170	1						
CS elective	4						
	17		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 4300	4	Co-op	0	Co-op	0	Elective	4
ENGW 3302	4					Elective	4
PSYC elective	4						
CS elective	4						
	16		0		0		8

Year 5			
Fall	Hours	Spring	Hours
CS 4100	4	CS 4500 and CS 4501	4
CS elective	4	PSYC seminar	4
PSYC lab elective	4	Computing and social issues	4
PSYC elective	4	Elective	4
	16		16

Total Hours: 134

Information Science and Cognitive Psychology, BS

The information science and cognitive psychology combined major provides a foundation in general psychology, psychology of language, cognition, and statistics. These are supplemented by an experimental

laboratory course, seminar course, and psychology electives. Information science combines concepts and skills from computer science, behavioral and social science, and system design to create an integrated, people-centered curriculum. Students who choose this program often have a general interest in human psychology or specific interests in artificial intelligence or human-computer interaction.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer and Information Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1
Computer Science Fundamental Courses		
A grade of C– or higher is required in computer science fundamental courses.		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 4100	Artificial Intelligence (integrative course)	4
Information Science Required Courses		
IS 2000	Principles of Information Science	4
IS 3500	Information System Design and Development	4
IS 4300	Human Computer Interaction (integrative course)	4
IS 4800	Empirical Research Methods	4
IS 4900	Information Science Senior Project (integrative course)	5

Psychology Courses

Code	Title	Hours
Required Courses		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4
PSYC 3466	Cognition	4

Advanced Psychology		
PSYC 3452	Sensation and Perception	4
or PSYC 3458	Biological Psychology	

Laboratory in Psychology		
Complete one of the following: 4		
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	

Seminar in Psychology		
Complete one of the following: 4		
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	

Psychology Electives		
Note: Courses satisfying the categories above cannot be reused.		

Complete two of the following: 8		
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3450	Learning and Motivation	
PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 4512	Neuropsychology	
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4628	Laboratory in Developmental Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	

With prior approval, directed study research and Honors Project courses can also be counted:		
PSYC 4970	Junior/Senior Honors Project 1	
PSYC 4971	Junior/Senior Honors Project 2	
PSYC 4991	Directed Study Research	

Supporting Courses

Code	Title	Hours
Calculus		

A grade of C– or higher is required:		
MATH 1341	Calculus 1 for Science and Engineering	4

Computing and Social Issues		
Complete one of the following: 4		
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks
PHIL 1145	Technology and Human Values
SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
Advanced Writing in the Disciplines		
ENGW 3302	Advanced Writing in the Technical Professions	4
or ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Understanding Societies and Institutions
- Analyzing and Using Data
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Program Requirement

134 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	MATH 1341	4	Vacation	0
CS 1800 and CS 1802	5	PSYC 3466	4	Elective	4		
CS 2500 and CS 2501	5	Elective	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4						
19		17		8		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 3500	4	Elective	4	Co-op	0

CS 3500	4	CS 3000	4	Elective	4		
PSYC 2320	4	IS 4300	4				
PSYC 3464	4	PSYC 3452 or 3458	4				
		CS 1210	1				
16		17		8		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 4800	4	Elective	4	Co-op	0
		Computing and social issues	4	Elective	4		
		PSYC elective	4				
		PSYC seminar	4				
0		16		8		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CS 4100	4	ENGW 3302	4	Co-op	0
		IS 4900	5	Elective	4		
		PSYC lab elective	4				
		PSYC elective	4				
0		17		8		0	

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation	0	Vacation	0
CS 1800 and CS 1802	5	PSYC 3466	4				
CS 2500 and CS 2511	5	Elective	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4						
19		17		0		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
IS 2000	4	IS 4300	4	Vacation	0	Vacation	0
CS 3500	4	PSYC 2320	4			Co-op	
MATH 1341	4	CS 3000	4				
PSYC 3464	4	PSYC 3452 or 3458	4				
		CS 1210	1				
16		17		0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	IS 3500	4	Elective	4	Co-op	0
		ENGW 3302	4	Elective	4		
		PSYC elective	4				

	Elective	4				
	0	16	8	0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4100	4	Elective	4	Co-op	
		IS 4800	4	Elective	4		
		PSYC elective	4				
		PSYC lab elective	4				
	0	16	8	0			

Total Hours: 134

Linguistics and Psychology, BS

This combined major educates students in psychology, linguistics, and the interface between the two disciplines, which are core areas within the field of cognitive science. Students study the formal structures of human language; sociocultural aspects of language use; and the cognitive aspects of language representations, language acquisition, and language processing. Students receive interdisciplinary training in the methods of experimental psychology, psycholinguistics, and linguistic analysis.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Linguistics Language Requirement

Complete two courses in the same language with a grade of C or higher. Proficiency at elementary level 2 or higher is required.

Linguistics Requirements

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		

LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4
Linguistics Electives		
Complete three of the following:		12
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
or LING 4970	Junior/Senior Honors Project 1	
or LING 4971	Junior/Senior Honors Project 2	
or LING 4991	Directed Study Research	

Psychology Requirements

Code	Title	Hours
Introductory and Intermediate Psychology		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
Advanced Psychology		
PSYC 3402	Social Psychology	4
PSYC 3466	Cognition	4
Psychology Lab		
Complete one of the laboratory courses or, with prior approval, a directed study or honors project on a topic related to psycholinguistics or cognition:		4
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4970	Junior/Senior Honors Project 1	
PSYC 4971	Junior/Senior Honors Project 2	
PSYC 4991	Directed Study Research	
Psychology Seminar		
Complete one of the following:		4
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4674	Seminar in Cognitive Neuroscience	
Psychology Electives		
A directed study on a topic related to psycholinguistics or cognition may be taken with prior approval.		
Complete two of the following:		8
PSYC 3404	Developmental Psychology	
PSYC 3450	Learning and Motivation	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 4520	Language and the Brain	
PSYC 4524	Cognitive Development	
PSYC 4610	Laboratory in Psycholinguistics	

PSYC 4612	Laboratory in Cognition
PSYC 4628	Laboratory in Developmental Psychology
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience
PSYC 4676	Seminar in Developmental Psychology
PSYC 4991	Directed Study Research

Integrative Requirement

Code	Title	Hours
PSYC 3464	Psychology of Language	4
Complete a directed study, two junior/senior honors project courses, or a study abroad (not a Dialogue):		4-8
LING 4991	Directed Study Research	
LING 4996		
LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2	
PSYC 4970 and PSYC 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2	
PSYC 4991	Directed Study Research	

Linguistics and Psychology Combined-Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3464	4				
ENGW 1111	4	Foreign language course	4				
MATH 1215	4	Elective	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3412	4	LING 3422	4	Vacation	0	Co-op	0
PSYC 2320	4	Linguistics elective	4				
PSYC 3466	4	PSYC 3402	4				
Foreign language course	4	Psychology elective	4				
		EESC 2000	1				
		16			17	0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LING 3450	4	Elective	4	Co-op	0

Linguistics or psychology elective	4	Elective	4
Psychology laboratory	4		
ENGW 3315	4		
		0	16
		8	
		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Linguistics elective	4	Elective	4	Co-op	0
		Linguistics or psychology elective	4	Elective	4		
		Psychology seminar	4				
		Elective	4				
		0			16	8	
						0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Elective	4
		Elective	4
		Elective	4
		Elective	4
		0	16

Total Hours: 129

Sample Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation	0	Vacation	0
PSYC 1101	4	PSYC 3464	4				
ENGW 1111	4	Foreign language course	4				
MATH 1215	4	Elective	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3412	4	LING 3422	4	Vacation	0	Vacation	0
PSYC 2320	4	PSYC 3402	4				
PSYC 3466	4	Linguistics elective	4				
Foreign language course	4	Psychology elective	4				
		16			16	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Linguistics elective	4	LING 3450	4	Vacation		Vacation	

Psychology lab	4	Linguistics or psychology elective	4
ENGW 3315	4	Elective	4
Elective	4	Elective	4
		16	16

Year 4

Fall	Hours	Spring	Hours
Linguistics or psychology elective	4	Elective	4
Psychology seminar	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 128

Psychology, Minor

The Department of Psychology offers a minor in psychology, which involves taking five psychology courses, some required and some elective, that focus on the multidisciplinary study of mind, brain, and behavior.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: A maximum of two courses (or 8 semester hours) of transfer credit may count toward the minor. This minor is not available to students majoring in behavioral neuroscience or in any combined major that involves psychology. Courses taken pass/fail and receiving an S grade may not be used toward the minor.

Code	Title	Hours
Required Course		
PSYC 1101	Foundations of Psychology	4
Personal/Social Bases of Behavior (Area A)		
Transfer courses are not permitted to fulfill the Area A requirement.		
Complete one of the following:		4
PSYC 3400	Personality	
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
Biological/Cognitive Bases of Behavior (Area B)		
Transfer courses are not permitted to fulfill the Area B requirement.		
Complete one of the following:		4
PSYC 3450	Learning and Motivation	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	

PSYC 3464	Psychology of Language
PSYC 3466	Cognition

Elective Courses

Code	Title	Hours
Complete two PSYC courses.		8

GPA Requirement

2.000 GPA required in the minor

Accelerated Bachelor/Graduate Degree Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees. Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See [additional information on PlusOne Bachelor's/Master's programs](http://www.northeastern.edu/plusone) (<http://www.northeastern.edu/plusone>).

Programs

Behavioral Neuroscience

- Behavioral Neuroscience, BS/Bioinformatics, MS

Biochemistry

- Biochemistry, BS/Bioinformatics, MS
- Biochemistry, BS/Biotechnology, MS
- Biochemistry, BS/Chemistry, MS

Cell and Molecular Biology

- Cell and Molecular Biology, BS/Biotechnology, MS

Biology

- Biology, BS/Biotechnology, MS
- Biology, BS/Bioinformatics, MS
- Biology, BS/Biology, PhD

Chemistry

- Chemistry, BS/Chemistry, MS
- Chemistry, BS/Biotechnology, MS

Mathematics

- Mathematics, BS/Applied Mathematics, MS
- Computer Science and Mathematics, BS/Mathematics, MS

Psychology

- Psychology, BS/Applied Behavior Analysis, MS
- Psychology, BS/Master of Arts in Teaching

Physics

- Physics, BS/Physics, MS
- Applied Physics, BS/Applied Physics and Engineering, MS
- Physics, BS/Physics, PhD

College of Social Sciences and Humanities

Website (<http://www.northeastern.edu/cssh>)

Uta Poiger, PhD, Dean

Matthew Tobin, MBA, Associate Dean, Administration and Finance

Ellen Cushman, PhD, Associate Dean, Academic Affairs, Diversity and Inclusion

Laura Green, PhD, Associate Dean, Teaching, Learning, and Experiential Education

Natasha Frost, PhD, Associate Dean, Graduate Studies

Alisa Lincoln, PhD, Associate Dean, Research, and Graduate Studies

Mary C. Mello, MA, Assistant Dean, Undergraduate Academic Affairs

Dean's Office

420 Renaissance Park

617.373.5173

617.373.2942 (fax)

Amelia Giordano, *Administrative Assistant*, a.giordano@northeastern.edu

Office of Student Academic Affairs

180 Renaissance Park

617.373.3980

617.373.7281 (fax)

csshadvising@northeastern.edu

The College of Social Sciences and Humanities is a leader in the experiential liberal arts. Students deepen their understandings of culture, society, history, politics, language, and more through the integration of focused academic study and a wide range of experiential opportunities. They use familiar methods and new tools to hone their skills in close reading, interpretation, analysis, oral communication, and critical thinking.

By exploring society's most pressing challenges, students may gain a broad understanding of the relationships among peoples and nations; global economics and politics; the diversity of languages, literatures, religions, and cultures; and multiple perspectives in urban affairs, public policy, law, criminal justice, and the ethical dimensions of human behavior.

The college offers a wide variety of undergraduate programs, including 16 different majors as well as a diverse set of combined-major options, concentrations, minors, and five-year bachelor's/master's degree PlusOne programs. The college also offers students the opportunity to create an independent major in cases where their interests and goals are not met by existing majors. Students in the college take elective classes to complement their chosen area of study and earn either a Bachelor of Arts or a Bachelor of Science degree.

All students in the college integrate experiential learning into their education—many students pursue multiple opportunities. Students may choose to conduct original student research, either independently or with a faculty member; to immerse themselves in communities and cultures either locally or around the world; to enhance their classroom learning through the co-op experience in a variety of fields; or to build more flexibility into their academic path with a Dialogue of Civilizations trip with a faculty member over the summer.

Programs in the college offer the flexibility for students to customize their academic experience around their intellectual and professional interests. A support system of department advisors, college advisors, co-

op coordinators, and peer mentors helps students explore their options and shape their plan.

Academic Advising

The College of Social Sciences and Humanities has an academic advising system that consists of academic advisors located in the Office of Student Academic Affairs in 180 Renaissance Park and faculty advisors located in the college's departments and program offices. Detailed advising information is available on the college website (<https://www.northeastern.edu/cssh/undergraduate/academic-advising>). Prelaw advising (<http://www.northeastern.edu/prelaw>) and premedical/pre dental advising (<http://www.northeastern.edu/prehealth>) are also available.

Academic Progression Standards

The College of Social Sciences and Humanities adheres to the university-wide academic progression standards described in the beginning of the catalog. Some majors have additional specific requirements in order to progress from year to year (see major requirements in departmental listings).

Graduation Clearance Process

Students in the College of Social Sciences and Humanities are required to meet with an academic advisor in the Office of Student Academic Affairs in 180 Renaissance Park to determine their remaining graduation requirements. Some departments also require a meeting with a faculty advisor in their major or program. This should be completed in the junior year to ensure ample time to complete any outstanding requirements.

College Requirements

All students in the College of Social Sciences and Humanities must successfully complete their major, college, and university requirements for their specific degree.

EXPERIENTIAL LIBERAL ARTS REQUIREMENT

The Experiential Liberal Arts course designation is part of a CSSH framework that emphasizes integration of experiential learning along with diversity and inclusion at key points in the curriculum. Students will ordinarily fulfill this requirement through any CSSH course on a Dialogue of Civilizations, any CSSH service-learning course, or an ELA-designated course:

Code	Title	Hours
ANTH 2350	Urban Anthropology	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 3415		
INTP 4995	Interpreting Practicum	4
CRIM 3200	Youth Crime and Justice	4
CRIM 4120	Courts and Sentencing	4
ENGL 2690	Boston in Literature	4
ENGL 2740	Writing and Community Engagement	4
ENGL 3340	Technologies of Text	4
ENGL 3375	Writing Boston	4
ENGL 3381	The Practice and Theory of Teaching Writing	4
ENGL 3382	Publishing in the 21st Century	4
ENGL 4400	Opening the Archive	4
HIST 1120	Public History, Public Memory	4

HIST 2000	Native American Resistance: Past and Present	4
HIST 2232		
HUSV 1101	Human Services Professions	4
HUSV 3520	Child Intervention and Treatment	4
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	4
PHIL 1150		
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	4
POLS 2357	Growth and Decline of Cities and Suburbs	4
SOCL 1220	Sociology of Boston	4
SOCL 2323	Ethnographic Methods	4
SOCL 3485	Environment, Technology, and Society	4
SPNS 3501	Advanced Spanish Conversation: Global Communication	4

Additional requirements for completing the ELA requirement will become available as they are approved. For the most up to date list of courses for the ELA requirement and ELA options for your major, please consult your academic advisor and your degree audit.

Interdisciplinary

Interdisciplinary Major

- Politics, Philosophy, and Economics, BS (p. 623)

Interdisciplinary Minors

- Computational Social Science, Minor (p. 625)
- Digital Methods in the Humanities, Minor (p. 626)
- Health, Humanities, and Society, Minor (p. 446)
- Latino/a, Latin American, and Caribbean Studies, Minor (p. 628)
- Law and Public Policy, Minor (p. 628)
- Urban Studies, Minor (p. 629)
- Women's, Gender, and Sexuality Studies, Minor (p. 630)

Politics, Philosophy, and Economics, BS

Website (<https://www.northeastern.edu/cssh/ppe>)

Serena Parekh

Associate Professor and Program Director

371 Holmes Hall
617.373.3636
617.373.4359 (fax)

Serena Parekh, Associate Professor and Program Director,
S.Parekh@northeastern.edu (r.sandler@northeastern.edu)

The PPE major at Northeastern University brings together three of the most important approaches to understanding the world around us: political science, philosophy, and economics. The PPE major is an interdisciplinary degree that not only provides students with the analytic tools from three different disciplines but also teaches students to make connections across disciplines and to keep multiple perspectives in mind when analyzing complex social phenomena. This interdisciplinary perspective and set of skills are indispensable in our increasingly

interconnected world and are essential in addressing the kinds of complex global problems future leaders will need to tackle.

There are a number of varieties of the PPE major that students may choose from in accordance with their own backgrounds and interests. These include:

- environment and energy policy
- international political economy
- law and justice
- logic and game theory
- political philosophy
- public and economic policy

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Politics, Philosophy, and Economics Major Requirements

Code	Title	Hours
Foundation Course		
PHIL 1160	Introduction to Economic Justice	4
Core Courses		
<i>Philosophy</i>		
PHIL 2303	Social and Political Philosophy	4
PHIL 1115	Introduction to Logic	4
PHIL 3435	Moral Philosophy	4
	or PHIL 2325	Ancient Philosophy and Political Thought
<i>Political Science</i>		
POLS 1160	International Relations	4
POLS 3405	International Political Economy	4
POLS 1150	American Government	4
	or POLS 1155	Comparative Politics
<i>Economics</i>		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
	or ECON 2316	Microeconomic Theory
Capstone		
	Complete one of the following:	4

ECON 4692	Senior Economics Seminar
PHIL 5001	Global Justice
POLS 4701	Political Science Senior Capstone
POLS 4703	Senior Thesis

Major Electives

Code	Title	Hours
Complete two of the following:		8-12
ECON 2000 to ECON 5999		
PHIL 2000 to PHIL 5999		
POLS 2000 to POLS 5999		

Concentration

Complete one of the following concentrations:

- Environment and Energy Policy (p.)
- International Political Economy (p.)
- Law and Justice (p.)
- Logic and Game Theory (p.)
- Political Philosophy (p.)
- Public and Economic Policy (p.)

Supporting Courses

Code	Title	Hours
Racial or Gender Justice		
Complete one of the following:		4
AFAM/POLS 2360	Politics of Poverty	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
AFAM 2639	Globalism, Racism, and Human Rights	
CRIM 4010	Gender, Crime, and Justice	
ECON 4916	Advanced Selected Topics in Microeconomics	
HIST 1225	Gender, Race, and Medicine	
HIST 2000	Native American Resistance: Past and Present	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1281	Islam, Gender, and Fashion	
PHIL 3500	Sexuality, Gender, and the Law	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
SOCL/WMNS 1260	Gender in a Changing Society	
SOCL 2270	Race and Ethnic Relations	
SOCL 4520	Race, Class, and Gender	
WMNS 1101	Sex, Gender, and Popular Culture	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
WMNS/ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective	
WMNS 2304	Communication and Gender	
WMNS/HIST 2373	Gender and Sexuality in World History	
WMNS/INTL 2480	Women and World Politics	
WMNS 2505	Digital Feminisms	
WMNS/HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	

WMNS 3100	Gender, Social Justice, and Transnational Activism	
WMNS/COMM 3304	Communication and Inclusion	
WMNS 3500	Sexuality, Gender, and the Law	
Statistics and Mathematics		
MATH 1231	Calculus for Business and Economics	4
or MATH 1241	Calculus 1	
ECON 2350	Statistics	4
or POLS 2400	Quantitative Techniques	
or MATH 2280	Statistics and Software	
Experiential Learning Requirement		
Complete one co-op, study abroad, qualifying Dialogue of Civilizations, or one of the following:		4
ECON 4996	Experiential Education Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ECON 4971	Junior/Senior Honors Project 2	
POLS 4970	Junior/Senior Honors Project 1	
POLS 4971	Junior/Senior Honors Project 2	
POLS 4942	Internship in Politics	
POLS 4996	Experiential Education Directed Study	

Major GPA/Credit Requirement

Complete 68 semester hours in the major with a 3.000 GPA.

Course Distribution Requirement

Complete at least four courses in each of the following subject areas: ECON, PHIL, and POLS.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN ENVIRONMENT AND ENERGY POLICY

Code	Title	Hours
Complete two of the following:		8
ECON 3423	Environmental Economics	
or ECON 3425	Energy Economics	
PHIL 1180	Environmental Ethics	
or PHIL 1185	The Ethics of Food	
POLS 2395	Environmental Politics and Policy	

Complete one of the following:		4
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	

CONCENTRATION IN INTERNATIONAL POLITICAL ECONOMY

Code	Title	Hours
Complete two of the following:		8
ECON 1290	History of the Global Economy	
ECON 1291	Development Economics	
ECON 2316	Microeconomic Theory	
ECON 3404	International Food Economics and Policy	
ECON 4635	International Economics	

PHIL 1185	The Ethics of Food
PHIL 1170	Business Ethics
POLS 3406	International Law
POLS 3487	Politics of Developing Nations
PHIL 4545	Religion and Politics in South Asia
Complete one of the following:	4
ECON 1292	Economic History of the Middle East
ECON 1293	European Economic History
HIST 2360	History of Capitalism in East Asia
POLS 3435	Politics and Governance of Europe and the European Union
POLS 3465	Government and Politics in the Middle East
PHIL 4545	Religion and Politics in South Asia

CONCENTRATION IN LAW AND JUSTICE

Code	Title	Hours
Complete three of the following, only two of which may be POLS courses:		12
ECON 3424	Law and Economics	
ECON 1240	Economics of Crime	
HIST 2308	Law, Justice, and Society in Modern China	
PHIL 2301	Philosophical Problems of Law and Justice	
PHIL 3500	Sexuality, Gender, and the Law	
PHIL 5001	Global Justice	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	
WMNS 3500	Sexuality, Gender, and the Law	

CONCENTRATION IN LOGIC AND GAME THEORY

Code	Title	Hours
Required Course		
PHIL 1115	Introduction to Logic	4
Electives		
Complete two of the following:		8
ECON 4681	Information Economics and Game Theory	
PHIL 2001	Ethics and Evolutionary Games	
PHIL 4515	Advanced Logic	
TDB: Concepts in Game Theory		

CONCENTRATION IN POLITICAL PHILOSOPHY

Code	Title	Hours
Politics Courses		
Complete two of the following:		8
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Philosophy Course		
Complete one of the following:		4

PHIL 2301	Philosophical Problems of Law and Justice
PHIL 3435	Moral Philosophy
PHIL 3500	Sexuality, Gender, and the Law
PHIL 5001	Global Justice

CONCENTRATION IN PUBLIC AND ECONOMIC POLICY

Code	Title	Hours
Required Course		
POLS 3307	Public Policy and Administration	4
Elective Courses		
Complete two of the following:		8
ECON 1240	Economics of Crime	
ECON 1281	Economics of the Creative Industries	
ECON 3410	Labor Economics	
ECON 3414	Economics of Human Capital	
ECON 3420	Urban Economic Issues	
ECON 3422	Economics of Transportation	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4680	Competition Policy and Regulation	
HIST 3800	American Conservatism from the New Deal to the Present	
PHIL 1160	Introduction to Economic Justice	
PHIL 5001	Global Justice	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2360	Politics of Poverty	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 3425	U.S. Foreign Policy	

Computational Social Science, Minor

This minor introduces and develops the essential skills for employing mathematical, formal, and computational methods in the social sciences. Students completing this minor will have a grasp of the fundamentals necessary for pursuing more in-depth studies in the emerging fields of computational social science and big data. The foundational courses emphasize skills in probability, statistics, and introductory programming. Other courses focus on the application of formal and computational methods in the social sciences including digital analysis of texts, maps, and networks. An additional elective provides breadth in social scientific studies of computation or the foundational principles of logic and computation.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Foundational Courses

Code	Title	Hours
MATH 2280	Statistics and Software	4
or ECON 2350	Statistics	
or CRIM 3700	Criminal Justice Statistics	
or SOCL 2320	Statistical Analysis in Sociology	
or POLS 2400	Quantitative Techniques	
or PSYC 2320	Statistics in Psychological Research	
INSH 1500	Digital Methods for Social Sciences and Humanities	4
or CS 2500	Fundamentals of Computer Science 1	

Applications of Computational Approaches in the Social Sciences

Code	Title	Hours
Complete two courses from the following:		8
<i>(Students may complete a capstone project under the direction of a faculty member in lieu of an application course.)</i>		
COMM 2105	Social Networks	
CRIM 4800	Crime Mapping	
DS 4100	Data Collection, Integration, and Analysis	
or DS 4200	Information Presentation and Visualization	
or DS 4300	Large-Scale Information Storage and Retrieval	
or DS 4400	Machine Learning and Data Mining 1	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
MISM 2301	Management Information Systems	
or MISM 2510	Fundamentals of Information Analytics	
PHIL 2001	Ethics and Evolutionary Games	
POLS 3310	Public Opinion, Voting, and Elections	
PPUA 5262	Big Data for Cities	

Elective in Social Inquiry, Computation, and Logic

Code	Title	Hours
Complete one course from the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
CS 2800	Logic and Computation	
ECON 4681	Information Economics and Game Theory	
IS 2000	Principles of Information Science	
PHIL 1115	Introduction to Logic	
or MATH 1215	Mathematical Thinking	
MATH 3081	Probability and Statistics	
PHIL 4515	Advanced Logic	
SOCL 4528	Computers and Society	

GPA Requirement

2.000 GPA required in the minor

Digital Methods in the Humanities, Minor**Minor Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Take two courses from each group and an additional course from either group.		20

Digital and Computational Methods

INSH 1500	Digital Methods for Social Sciences and Humanities	
or CS 2500	Fundamentals of Computer Science 1	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 3340	Technologies of Text	
CRIM 4800	Crime Mapping	
COMM 2105	Social Networks	
JRNL 3610	Digital Storytelling and Social Media	
PHIL 2001	Ethics and Evolutionary Games	

Culture, Society, and Value in the Digital Age

PHIL 1145	Technology and Human Values	
COMM 1255	Communication in a Digital Age	
ENGL 2730	Digital Writing	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3340	Technologies of Text	
WMNS 2505	Digital Feminisms	
MSCR 1310	Introduction to Digital Media Culture	
or MSCR 3420	Digital Media Culture	
CLTR 2715	New Media Narratives in Latin America: Local and Global Dimensions	
CLTR 3418	Nationalism	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
SOCL 1280	The 21st-Century Workplace	
SOCL 4528	Computers and Society	

GPA Requirement

2.000 GPA required in the minor

Health, Humanities, and Society, Minor

The health, humanities, and society minor is designed for students who would like to learn how to think capaciously and creatively about health using the rigorous, precise, and flexible skills trained by the social sciences and the humanities. The social sciences teach students to think about the social, economic, and political factors that structure health conditions and outcomes in particular societies, while the humanities train students to navigate the complexities of interpersonal interaction and their ethical implications, to relate the micro to the macro and texts to contexts, to historicize encounters, to communicate accurately and effectively across a variety of media, and to engage in creative analytical thinking about healthcare. The landscape of healthcare is quickly

changing, and this training will equip students well not only for the diverse forms of health work that exist today, but for as yet unimaginable varieties of health-related work in the future.

This minor is structured around the particular competencies that the social sciences and humanities train. Those competencies are narrative and historical perspective, critical attention and observation, ethics and judgment, performance and creativity, and social and structural proficiency. Rather than adopting the more traditional approach of connecting particular skills to particular disciplines (say, narrative to literature and observation to art history), this minor builds from discipline-specific health knowledge while training students to think across disciplines. Thus, it will not be unusual for students to find a single course addressing multiple competencies or to take courses in different disciplines that address the same competency from distinct but complementary perspectives.

This minor is housed in the Humanities Center of the College of Social Sciences and Humanities in partnership with the Bouvé College of Health Sciences.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

No more than two courses, in addition to the introductory course, may be taken under the 2000 level.

Code	Title	Hours
Introductory Course		
INSH 1300	Introduction to Health and Humanities	4
Humanities Requirement		
Complete two of the following:		8
ENGL 2770	Writing to Heal	
ENGL 3700	Narrative Medicine	
ENGL 4710	Capstone Seminar	
ENGL 4040	Topics in 19th-Century Literatures	
HIST 3322	The History of Medicine in North America	
PHIL 1165	Moral and Social Problems in Healthcare	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1295	Religious Perspectives on Health and Healing	
WMNS 1225	Gender, Race, and Medicine	
Social Sciences Requirement		
Complete two of the following:		8
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4580	Special Topics in Anthropology	
ECON 1230	Healthcare and Medical Economics	
HLTH 5280	The (in)Visibility of (dis)Ability in Society	
PHTH/SOCL 1120	Society and Health	
PHTH 1270	Introduction to Global Health	

PHTH 2300	Communication Skills for the Health Professions
PHTH 4120	Global Perspectives on Discrimination and Health
PHTH 5202	Introduction to Epidemiology
PHTH 5234	Economic Perspectives on Health Policy
SOCL 1295	Drugs and Society
SOCL 2303	Gender and Reproductive Justice
SOCL 3441	Sociology of Health and Illness

GPA Requirement

2.000 GPA required in the minor

Food Systems Sustainability, Health, and Equity, Minor

The minor in food systems sustainability, health, and equity is an interdisciplinary exploration of the contemporary food system, with particular attention to how the system evolved; its diverse societal, health, and environmental impacts; and ideas for making the food system more sustainable, healthy, and equitable for all.

For more information, contact the program director, Professor Christopher Bosso, 360K Renaissance Park, c.bosso@northeastern.edu.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Complete four courses from the list below. Two of the courses must be upper-level (numbered 3000 or higher). Only one course can be from the major.		16-17
<i>Upper-Level Courses</i>		
ECON 3404	International Food Economics and Policy	
ENTR 4506	Advanced Studies in Social Enterprise	
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
ENVR 3150	Food Security and Sustainability	
ENVR 4515	Sustainable Development	
PPUA 4701	Food Systems Sustainability, Health, and Equity Practicum	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5270	Food Systems and Public Policy	
<i>Additional Courses</i>		
EEMB 2420	Fisheries Biology, Policy, and Conservation	
ENTR 2206	Global Social Enterprise	
ENVR 1101	Environmental Science	
HSCI 1106	Contemporary Issues in Nutrition	
HUSV 2400	Food Justice and Community Development	
INSH 1102	Food in Contemporary Context	
PHIL 1185	The Ethics of Food	

GPA Requirement

2.000 GPA required in the minor

Latino/a, Latin American and Caribbean Studies, Minor**Overview**

The LLACS (Latino/a, Latin American, and Caribbean Studies) program offers an interdisciplinary minor. It explores the historical, cultural, social, political, and economic foundations of and linkages between U.S. Latino society, Latin America, and the Caribbean. It draws from the heritages of the Americas that are grounded in predominantly indigenous, African, and European cultures.

For information about the minor, contact CSGS Administrative Coordinator Stefanie Rich at s.rich@northeastern.edu.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Proficiency in Spanish or Portuguese to course number 3101 or above is strongly encouraged.

Required Courses

Code	Title	Hours
LACS 1220	Latino, Latin American, and Caribbean Studies	4
Complete one of the following:		4
HIST 1187	Introduction to Latin American History	
CLTR 1505	Introduction to Latin American Culture	

Culture and Literature Electives

Code	Title	Hours
Complete two of the following:		8
CLTR 1240	Latin American Film	
CLTR 1504	Introduction to Spanish Culture	
CLTR 1505	Introduction to Latin American Culture	
CLTR 3715	New Narratives: Latin America after 1989	
CLTR 3725	Representing Violence and Human Rights in Latin America	
ENGL 2460	Multiethnic Literatures of the U.S.	
LITR 4655	Latin American Literature	
MUSC 1131	Music of Latin America and the Caribbean	

History and Social Sciences Electives

Note: With the approval of the director of Latino/a, Latin American, and Caribbean Studies, up to four study-abroad or Dialogue of Civilization courses may be used toward the minor.

Code	Title	Hours
Complete two of the following:		8
ANTH 2365	Sport, Culture, and Society	
ANTH 4500	Latin American Society and Development	

HIST 1206	Drug Trade and Drug War: History, Security, Culture
SOCL 2270	Race and Ethnic Relations

GPA Requirement

2.000 GPA required in the minor

Law and Public Policy, Minor**Overview**

The law and public policy minor offers students an opportunity to obtain a thorough understanding of the U.S. legal system and to use that knowledge to examine current law and policy debates. In the LPP minor core courses, students have the opportunity to watch a criminal and/or civil trial, participate in a moot court before a panel of "judges," and listen to speakers from both the public and private sector (for example, a superior court judge and assistant attorney general). While the minor is well-suited for students interested in pursuing a career in law and/or policy, it is invaluable for students in any field of practice, as law affects all professions and facets of everyday life.

For more information, contact the program director, Professor Dan Urman, 310 Renaissance Park, 617.373.6145, d.urman@northeastern.edu.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
A grade of B or higher is required in the following two courses:		
LPSC 1101	Introduction to Law	4
LPSC 2301	Introduction to Law, Policy, and Society	4

Law and Public Policy Course

Code	Title	Hours
Complete one of the following:		4
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
LPSC 3303	Topics in Law and Public Policy	
LPSC 4304	Advanced Debates in Law and Public Policy	

Elective Courses

Code	Title	Hours
Complete two of the following courses not used to satisfy the requirements above:		8
AFAM 2360	Politics of Poverty	
AFAM 2549	Public Policy and Black America	
ANTH 4580	Special Topics in Anthropology	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
COMM 3501	Free Speech: Law and Practice	
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	

CRIM 2100	Criminal Due Process
CRIM 2200	Criminology
CRIM 3030	Global Criminology
CRIM 3040	Psychology of Crime
CRIM 3100	Criminal Law
CRIM 3200	Youth Crime and Justice
CRIM 4010	Gender, Crime, and Justice
CRIM 4020	Race, Crime, and Justice
CRIM 4100	Juvenile Law
CRIM 4500	Police Strategy
CRIM 4630	Political Crime and Terrorism
CRIM 4710	Law and Psychology
CRIM 4900	Advanced Seminar in Criminology and Criminal Justice
ECON 1240	Economics of Crime
ECON 3404	International Food Economics and Policy
ECON 3423	Environmental Economics
ECON 3424	Law and Economics
ENGL 3325	Rhetoric of Law
ENGW 3311	Advanced Writing for Prelaw
ENVR 5210	Environmental Planning
FINA 4312	Issues in Corporate Governance (for business students only)
HIST 2303	Gender and Reproductive Justice
HIST 2308	Law, Justice, and Society in Modern China
HIST 2360	History of Capitalism in East Asia
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy
INTL 3400	International Conflict and Negotiation
JRNL 3550	The First Amendment and the Media
LPSC 2302	Global Human Rights: A Social and Economic Perspective
LPSC 3303	Topics in Law and Public Policy
LPSC 4304	Advanced Debates in Law and Public Policy
MUSI 3335	Copyright Law for Musicians
PHIL 1160	Introduction to Economic Justice
PHIL 2301	Philosophical Problems of Law and Justice
PHIL 2303	Social and Political Philosophy
POLS 3302	Judicial Process and Behavior
POLS 3307	Public Policy and Administration
POLS 3324	Law and Society
POLS 3406	International Law
POLS 4500	U.S. Constitutional Law
POLS 4505	U.S. Civil Liberties
PPUA 5264	Energy Transitions and Climate Resilience: Technology, Policy, and Social Change
SOCL 1241	Sociology of Violence
SOCL 1260	Gender in a Changing Society
SOCL 2205	Law and Social Justice
SOCL 2303	Gender and Reproductive Justice

SOCL 4514	"The Wire" and the Study of Urban Inequalities
SOCL 4518	Law and Society in a Digital World
WMNS 2303	Gender and Reproductive Justice
WMNS 3100	Gender, Social Justice, and Transnational Activism
WMNS 3500	Sexuality, Gender, and the Law

GPA Requirement

3.000 GPA required in the minor

Urban Studies, Minor

Overview

The urban studies minor offers students interested in cities an opportunity to take advantage of the resources of an urban university situated in a major metropolitan area. The minor seeks to equip students with an understanding of the dynamics of urban growth and development and includes the study of urban social and political institutions. Many courses cover climate change, sustainability, housing, and the urban economy. The minor complements many social science majors as well as architecture, business, and engineering. The minor is designed to provide a solid background for graduate study and professional careers in urban planning and policy, social work, and related fields.

For more information, contact the program director, Professor Gavin Shatkin, 310 Renaissance Park, 617.373.3074, g.shatkin@northeastern.edu.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
POLS 2357	Growth and Decline of Cities and Suburbs	4
SOCL 2358	Current Issues in Cities and Suburbs	4

Elective Courses

Code	Title	Hours
Complete two of the following:		
AFAM 2399	Black Community and Social Change	8
ANTH 2305	Global Markets and Local Culture	
ANTH 2350	Urban Anthropology	
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	
ARCH 2550	Real Estate Development and Design	
ECON 1240	Economics of Crime	
ECON 3420	Urban Economic Issues	
ECON 3422	Economics of Transportation	
HIST 3487	Central European Capitals on the Eve of World War I	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	

POLS 2357	Growth and Decline of Cities and Suburbs
POLS 2360	Politics of Poverty
POLS 3307	Public Policy and Administration
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
SOCL 1220	Sociology of Boston
SOCL 2358	Current Issues in Cities and Suburbs
SOCL 4514	"The Wire" and the Study of Urban Inequalities

GPA Requirement

3.000 GPA required in the minor

Women's, Gender, and Sexuality Studies, Minor

Overview

Northeastern offers an interdisciplinary minor for undergraduate students who wish to explore gender and sexuality in relation to other axes of power and identity, including race, class, ethnicity, and dis/ability. Women's, gender, and sexuality studies (WGSS) covers a wide variety of theoretical and empirical scholarship both within traditional disciplines and in cutting-edge, interdisciplinary frames. WGSS students have an opportunity to:

- Learn about approaches to gender and sexuality in the social sciences and humanities and through frameworks that bridge traditional fields
- Explore gender and sexuality in the global community by dipping into disciplines ranging throughout the social sciences, arts, humanities, and physical sciences
- Study politics and pop culture, sociology and psychology, writing and religion, and much more
- Open up new ways of thinking, bringing gender and sexuality studies to bear on important social and intellectual questions

For more information, visit the WGSS website (<http://www.northeastern.edu/wgss>), or contact the program coordinator, 263 Holmes Hall, 617.373.4984, wgss@northeastern.edu.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified. Please note that special topics courses in some areas may also count as electives toward a WGSS minor in certain semesters, pending approval of the syllabus by the WGSS program director. In the case of cross-listed courses, students may enroll under any of the departmental designations, regardless of major or minor affiliation.

Required Course

Code	Title	Hours
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	4

Elective Courses

Code	Title	Hours
	Complete three of the following:	12

At least one elective must be taken at the 2000 level or above and electives must be drawn from at least two different departments:

WMNS 1101/ SOCL 1102	Sex, Gender, and Popular Culture
WMNS/AFAM/ HIST 1225	Gender, Race, and Medicine
WMNS 1441	Topics in Women's, Gender, and Sexuality Studies
WMNS 1990	Elective
WMNS/SOCL/ HIST 2303	Gender and Reproductive Justice
WMNS/HIST 2373	Gender and Sexuality in World History
WMNS 2441	Topics in Women's, Gender, and Sexuality Studies
WMNS/AFAM/ ENGL 2455	American Women Writers
WMNS/MSCR 2505	Digital Feminisms
WMNS 2990	Elective
WMNS/POLS/ SOCL 3100	Gender, Social Justice, and Transnational Activism
WMNS/POLS/ PHIL 3500	Sexuality, Gender, and the Law
WMNS 3990	Elective
WMNS 4990	Elective
WMNS 4992	Directed Study
AFRS/WMNS 1185	Gender in the African Diaspora
ANTH/WMNS 2302	Gender and Sexuality: A Cross-Cultural Perspective
CINE 3500	Film Theory
CINE/WMNS 3392	Gender and Film
COMM 1131	Sex, Relationships, and Communication
COMM/WMNS 2304	Communication and Gender
COMM/WMNS 3304	Communication and Inclusion
COMM/WMNS 3530	Communication and Sexualities
COMM/WMNS 3610	Communication, Politics, and Social Change
CRIM/WMNS 4010	Gender, Crime, and Justice
ENGL/WMNS 2451	Postcolonial Women Writers
ENGL/WMNS 3676	Representing Gender and Sexuality in Literature
ENGL/WMNS/ JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
HUSV/WMNS 2800	Sexual Orientation and Gender Expression in Practice and Policy
WMNS/HUSV 3580	Sexual Violence: Counseling, Programs, and Policy
INTL 2400	Politics of Islam and Gender
INTL/WMNS 2480	Women and World Politics
LING 3456	Language and Gender
MUSC 1106	Women in Music
MUSC 2340	Divas, DJs, and Double Standards

NRS 3302	Nursing with Women and Families
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL/WMNS 1271	Sex in Judaism, Christianity, and Islam
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL/WMNS 1281	Islam, Gender, and Fashion
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
PSYC 1200	Psychology of Women
SOCL/WMNS 1255	Sociology of the Family
SOCL/WMNS 1260	Gender in a Changing Society
SOCL 2268	Social Movements
SOCL/WMNS 4520	Race, Class, and Gender
SOCL/WMNS 4523	Sexualities
THTR 2500/ WMNS 2501	Breaking the Glass Ceiling: Women in Theatre

GPA Requirement

2.000 GPA required in the minor

Asian Studies

Website (<http://www.northeastern.edu/asianstudies>)

Gavin Shatkin, PhD
Director

310 Renaissance Park
617.373.3074
Gavin Shatkin, Director, g.shatkin@northeastern.edu

The Asian Studies Program promotes a cosmopolitan understanding of the regional, national, and local cultures in the fastest-growing continent in the world. Our interdisciplinary program is based on an excellent core of faculty who are drawn from a range of departments (including languages, literatures, and cultures; English; history; music; political science; philosophy and religion; public policy; and sociology and anthropology) and the World Languages Center. Our students are strongly encouraged to accelerate their language acquisition process and gain firsthand knowledge of Asian cultures and societies through participation in a university-sponsored study-abroad program, an international co-op, a Dialogue of Civilizations program, or an experiential learning experience. Students can also take advantage of the outstanding Asian cultural resources available in the Boston metropolitan area, particularly at the Museum of Fine Arts and the Peabody Essex Museum in Salem.

Academic Progression Standards

Same as university-wide standards described under "Academic Status (p. 31)."

Preapproved Template Program in Asian Studies

Asian studies offers a preapproved template program that may be paired with another preapproved template program to create a combined major.

Programs

Bachelor of Arts (BA)

- Asian Studies (p. 631)
- History and Asian Studies (p. 632)

Minor

- East Asian Studies (p. 634)

Asian Studies, BA

The Bachelor of Arts in Asian Studies offers undergraduates a broad liberal arts education in the histories, politics, cultures, and societies of Asia. Asian studies majors complete at least two years of an Asian language in addition to pursuing a rigorous course of study covering a number of disciplines and national traditions. The core course work provides foundational knowledge in the history, politics, and societies of East Asian nations, Asia's place within a globalizing world, and skills in research and analysis. Majors are also required to develop expertise in one of the following focus areas: history; society and politics; language, literature, and culture; or religious studies. Finally, students are required to complete academic study or a professional experience abroad.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Asian Studies Requirements

Code	Title	Hours
Required Courses		
ASNS 1150	East Asian Studies	4
HIST 1215	Origins of Today: Historical Roots of Contemporary Issues	4
Asia in Global Context		
Complete one of the following:		4
ECON 1290	History of the Global Economy	
ENGL 2450	Postcolonial Literature	
INTL 2240	Global Population and Development	
POLS 3487	Politics of Developing Nations	
Capstone		
Complete one of the following:		4

ASNS 4900	Asian Studies Capstone Directed Study
ASNS 4920	Asian Studies Capstone Seminar

International Experience

Complete a professional or academic experience abroad in consultation with your advisor.

Language and Elective Requirements

Code	Title	Hours
Language Courses		
Complete the following courses in either Chinese or Japanese:		16

Chinese

Select one of the following:

CHNS 1101 Elementary Chinese 1

CHNS 1301 Elementary Chinese Immersion 1

Select one of the following:

CHNS 1102 Elementary Chinese 2

CHNS 1302 Elementary Chinese Immersion 2

Select one of the following:

CHNS 2101 Intermediate Chinese 1

CHNS 2301 Intermediate Chinese Immersion 1

Select one of the following:

CHNS 2102 Intermediate Chinese 2

CHNS 2302 Intermediate Chinese Immersion 2

Japanese

JPNS 1101 Elementary Japanese 1

JPNS 1102 Elementary Japanese 2

JPNS 2101 Intermediate Japanese 1

or JPNS 2301 Intermediate Japanese Immersion 1

JPNS 2102 Intermediate Japanese 2

or JPNS 2302 Intermediate Japanese Immersion 2

Asian Studies Electives

Complete six courses from the following focus areas. Choose at least three courses from one focus area: 24

History Focus Area

HIST 1246 World War II in the Pacific

HIST 1252 Japanese Literature and Culture

HIST 1500 Modern Chinese History and Culture

HIST 2308 Law, Justice, and Society in Modern China

HIST 2351 Modern Japan

Society and Politics Focus Area

ANTH 4350 Ethnography of Southeast Asia

ANTH 4515 Culture and Politics in Modern India

ASNS 2245 The Asian-American Experience

INTB 2501 Competing to Win in Emerging Markets

MKTG 4220 Marketing in Asia

PHIL 1130 Ethics: East and West

INTL 2240 Global Population and Development

POLS 3487 Politics of Developing Nations

Language, Literature, and Culture Focus Area

ARCH 1320 Architecture and Global Cultures, 1400 to Present

CLTR 1260 Japanese Film

CLTR 1700 Introduction to Japanese Pop Culture

ENGL 2450 Postcolonial Literature

MUSC 2130 Music of Asia

PHIL 1130 Ethics: East and West

Religious Studies Focus Area

PHIL 1231 Image and Icon in South Asia

PHIL 1273 Jainism

PHIL 1275 Hinduism, Buddhism, and Beyond: Eastern Religions

PHIL 1276 Indian Religions

PHIL 1290 Chinese Philosophy and Religion

PHIL 2394 Chinese Buddhism

PHIL 2395 Japanese Buddhism

PHIL 4393 Asian Religions in the United States

PHIL 4545 Religion and Politics in South Asia

Asian Studies Major Credit Requirement

Complete 56 semester hours in the major.

Program Requirements

128 total semester hours required

History and Asian Studies, BA

History and Asian studies offers an interdisciplinary combined major. Students interested in the combined major in history and Asian studies integrate the exploration of human history with the rigorous study of Asian cultures, societies, languages, and economies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4

Introductory Level

Choose one course from the 1000 level except HIST 1215, which is required by Asian studies. 4

History Seminar and Historical Writing

HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Choose one course from the following: 4

HIST 2390	Africa and the World in Early Times	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	

Advanced History

Complete one history course 3000 level or above 4

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range. These courses may double-count in the requirements above (except History Colloquium).

Asian Studies Requirements

Code	Title	Hours
Required Courses		
ASNS 1150	East Asian Studies	4
HIST 1215	Origins of Today: Historical Roots of Contemporary Issues	4

Asia in Global Context

Complete one of the following: 4

ECON 1290	History of the Global Economy	
ENGL 2450	Postcolonial Literature	
INTL 2240	Global Population and Development	
POLS 3487	Politics of Developing Nations	

Complete a professional or academic experience abroad in consultation with your advisor.

Language and Elective Requirements

Code	Title	Hours
Language Courses		

Complete the following courses in either Chinese or Japanese: 16

Chinese

Select one of the following:		
CHNS 1101	Elementary Chinese 1	
CHNS 1301	Elementary Chinese Immersion 1	
Select one of the following:		
CHNS 1102	Elementary Chinese 2	
CHNS 1302	Elementary Chinese Immersion 2	
Select one of the following:		
CHNS 2101	Intermediate Chinese 1	
CHNS 2301	Intermediate Chinese Immersion 1	

Select one of the following:

CHNS 2102	Intermediate Chinese 2	
CHNS 2302	Intermediate Chinese Immersion 2	
<i>Japanese</i>		
JPNS 1101	Elementary Japanese 1	
JPNS 1102	Elementary Japanese 2	
JPNS 2101	Intermediate Japanese 1	
or JPNS 2301	Intermediate Japanese Immersion 1	
JPNS 2102	Intermediate Japanese 2	
or JPNS 2302	Intermediate Japanese Immersion 2	

Asian Studies Electives

Complete three courses from the following focus areas. 12

Society and Politics Focus Area

ANTH 4350	Ethnography of Southeast Asia	
ANTH 4515	Culture and Politics in Modern India	
ASNS 2245	The Asian-American Experience	
INTB 2501	Competing to Win in Emerging Markets	
MKTG 4220	Marketing in Asia	
PHIL 1130	Ethics: East and West	
INTL 2240	Global Population and Development	
POLS 3487	Politics of Developing Nations	

Language, Literature, and Culture Focus Area

ARCH 1320	Architecture and Global Cultures, 1400 to Present	
CLTR 1260	Japanese Film	
CLTR 1700	Introduction to Japanese Pop Culture	
ENGL 2450	Postcolonial Literature	
MUSC 2130	Music of Asia	
PHIL 1130	Ethics: East and West	

Religious Studies Focus Area

PHIL 1231	Image and Icon in South Asia	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4393	Asian Religions in the United States	
PHIL 4545	Religion and Politics in South Asia	

Capstone

Code	Title	Hours
Complete one of the following: 4		
HIST 4701	Capstone Seminar	
ASNS 4900	Asian Studies Capstone Directed Study	
ASNS 4920	Asian Studies Capstone Seminar	

Integrative Requirement

Note: Public history concentrators satisfy this requirement within the concentration with Fieldwork in History 1 (HIST 4903) and (HIST 4904).

Code	Title	Hours
HIST 2351	Modern Japan	4
or ASNS 2245	The Asian-American Experience	

History and Asian Studies Major Credit Requirement

Complete 82 semester hours in the major.

Program Requirements

128 total semester hours required

East Asian Studies, Minor

East Asian studies minors can choose from either a nonlanguage or a language track. For the nonlanguage track, minors focus on gaining a broad interdisciplinary understanding of Asian societies, economies, politics, and cultures. The core course, East Asian studies, provides students with an understanding of the interlinkages in the historical, social, and political development of China, Korea, and Japan. Students can then choose from elective courses that represent a spectrum of disciplinary knowledge of Asian societies. For the language track, students are required to achieve at least first-year proficiency in an Asian language and also take East Asian studies and two elective courses of their choosing.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Complete either the nonlanguage track or the language track.

Nonlanguage Track

Code	Title	Hours
Core Course		
ASNS 1150	East Asian Studies	4
Elective Courses		
Complete four of the following. They may include up to two courses taken as part of an approved study-abroad program:		16
ENGL 2470	Asian-American Literature	
ASNS 2245	The Asian-American Experience	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 1252	Japanese Literature and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
CHNS 1101	Elementary Chinese 1	
CHNS 1102	Elementary Chinese 2	
CHNS 2101	Intermediate Chinese 1	
CHNS 2301	Intermediate Chinese Immersion 1	
CLTR 1500	Modern Chinese History and Culture	
JPNS 1101	Elementary Japanese 1	
JPNS 1102	Elementary Japanese 2	
JPNS 2101	Intermediate Japanese 1	
CLTR 1700	Introduction to Japanese Pop Culture	
CLTR 1260	Japanese Film	
PHIL 1231	Image and Icon in South Asia	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 2394	Chinese Buddhism	

PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 4393	Asian Religions in the United States
PHIL 4545	Religion and Politics in South Asia

Language Track

Code	Title	Hours
Core Course		
ASNS 1150	East Asian Studies	4
Required Courses		
Complete the following two courses in either Chinese or Japanese:		8
<i>Chinese</i>		
CHNS 1101 and CHNS 1102	Elementary Chinese 1 and Elementary Chinese 2	
<i>Japanese</i>		
JPNS 1101 and JPNS 1102	Elementary Japanese 1 and Elementary Japanese 2	
Elective Courses		
Complete two of the following. They may include up to two courses taken as part of an approved study-abroad program:		8
ASNS 2245	The Asian-American Experience	
ENGL 2470	Asian-American Literature	
HIST 1253	History of Vietnam Wars	
HIST 1252	Japanese Literature and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
CLTR 1500	Modern Chinese History and Culture	
CHNS 2101	Intermediate Chinese 1	
CHNS 2301	Intermediate Chinese Immersion 1	
CLTR 1700	Introduction to Japanese Pop Culture	
CLTR 1260	Japanese Film	
JPNS 2101	Intermediate Japanese 1	
PHIL 1231	Image and Icon in South Asia	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 2398	Religion and Culture in Indian Cinema	
PHIL 4393	Asian Religions in the United States	
PHIL 4545	Religion and Politics in South Asia	

GPA Requirement

2.000 GPA required in the minor

School of Criminology and Criminal Justice

Website (<http://www.northeastern.edu/sccj>)

Anthony Braga, PhD

Distinguished Professor and Director

Amy Farrell, PhD

Associate Professor and Associate Director

Kevin Drakulich, PhD

Associate Professor and Undergraduate Program Director

Gregory Zimmerman, PhD

Associate Professor and Graduate Program Director

204 Churchill Hall
617.373.3327
617.373.8723 (fax)
sccj@northeastern.edu

The School of Criminology and Criminal Justice was established in 1967 as one of the first schools of its kind devoted to matters of crime and justice. The school is a leading force in education, research, and policymaking in both the public and the private sectors of the criminal justice field.

The School of Criminology and Criminal Justice seeks to prepare students for professional and research careers in criminology, criminal justice, and related fields by applying multidisciplinary and comparative social science to understand, predict, and explain crime as well as to contribute to the development of public policy on crime and justice issues. The school seeks to develop its students intellectually and ethically, while providing them with a keen appreciation of the complexities of crime and of the public and private efforts to make communities safer and to ensure justice.

The world of criminal justice is much more than police officers, corrections officials, criminal defense lawyers, or security and loss prevention personnel. At the School of Criminology and Criminal Justice, the boundaries of criminal justice have expanded beyond traditional views of the field to include emphases on law and justice, organizations and leadership, global criminology, and crime policy. Criminal justice education today is about more than the criminal; it involves understanding the victim and the community: repairing harm, reducing fear, rebuilding safe communities, and assuring justice in spirit and act.

The School of Criminology and Criminal Justice has had a long-standing attachment and commitment to improving a wide range of justice system agencies. The school actively engages external partners in an ongoing conversation about research, community service, and salient policy questions. Part of this dialogue is supported by an ongoing program of applied and social science research. Much of this research focuses on evaluating existing government crime-control programs and policies to determine whether they work, as well as inquiries about the etiology and prevention of crime. In addition, much of our research examines the unintended consequences of policy: institutionalized racism, differential impact of justice policy on certain groups, and the like. Research conducted at Northeastern on these topics is approached with ethical sensitivity and scientific rigor.

Criminology and criminal justice, as a social science, began in the early part of the 20th century. Nearly 100 years old, the field has blossomed in large part through the ingenuity of several notable scholars. The School of Criminology and Criminal Justice is pleased to be home to many of the country's preeminent contemporary scholars. School of Criminology and Criminal Justice faculty members regularly present at scholarly conferences, national and international seminars, and to policymakers worldwide.

Academic Progression Standards

Same as university-wide standards described under "Academic Status (p. 31)."

Programs

Bachelor of Science (BS)

- Criminal Justice (p. 635)
- Computer Science and Criminal Justice (p. 307)
- Criminal Justice and Philosophy (p. 640)
- Criminal Justice and Political Science (p. 641)
- Criminal Justice and Psychology (p. 612)
- Cybersecurity and Criminal Justice (p. 351)
- Human Services and Criminal Justice (p. 646)

Minor

- Criminal Justice (p. 648)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Criminal Justice, BS

The BS in criminal justice degree is designed to prepare students for professional and research careers in criminal justice, criminology, and related fields by applying multidisciplinary and comparative social science to understand, predict, and explain crime and contribute to the development of public policy within urban communities. Using an experiential learning approach, the criminal justice major seeks to develop its students intellectually and ethically, while providing them with a keen appreciation for the complexities of crime and public and private efforts to make communities safer and ensure justice.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Major Requirements

Code	Title	Hours
Criminal Justice Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4

CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4

Criminal Justice Integrated Learning Core

Code	Title	Hours
Introduction to College		
CRIM 1000	Criminal Justice at Northeastern	1
Co-op Integration Seminars		
Co-op students should complete at least two of the following:		2
CRIM 2000	Co-op Integration Seminar 1 (required for the first co-op)	
CRIM 3000	Co-op Integration Seminar 2 (required for the first co-op)	
CRIM 4000	Co-op Integration Seminar 3 (required if a second co-op is taken)	
Non-co-op students should complete one additional criminal justice elective with credit of at least 4 semester hours.		
Senior Capstone		
CRIM 4949	Senior Capstone Seminar	4

Criminal Justice Electives

Code	Title	Hours
Thematic Elective		
Complete one of the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Electives		
Complete two of the following:		8
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	

System-Wide Elective

Complete one of the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4040	Crime Prevention	

Criminal Justice Open Electives

Complete four courses from the following range:		16
CRIM 4001 to CRIM 7999		

Supporting Courses

Code	Title	Hours
Computer Science		
CS 1100	Computer Science and Its Applications	4

Mathematics

Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
MATH 1242	Calculus 2	
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1252	Calculus and Differential Equations for Biology 2	
MATH 1340	Intensive Calculus for Engineers	
MATH 1341	Calculus 1 for Science and Engineering	
MATH 1342	Calculus 2 for Science and Engineering	

Criminal Justice Sequence Requirements

Complete three courses from the same department, two of which must be numbered 2000 or above or complete a minor.

Criminal Justice Credit Requirement

Complete 59 credit hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 1000	1	CRIM 1200	4	Vacation	0	Vacation	0
CRIM 1100	4	PSYC 1101	4				
SOCL 1101	4	MATH 1215	4				
CS 1100	4	Elective	4				
ENGW 1111	4						
		17		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 2100	4	Criminal justice concentration elective	4	Vacation	0	Co-op	0
CRIM 2200	4	Outside-criminal-justice elective or sequence	4				
Outside-criminal-justice elective or sequence	4	Outside-criminal-justice elective or sequence	4				
Outside-criminal-justice elective or sequence	4	Criminal justice concentration elective	4				
		CRIM 2000		1			
		16		17		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 3600	4	Criminal justice advanced elective	4	Co-op	0
		CRIM 3000	1	Outside-criminal-justice elective or sequence	4		
		Criminal justice system-wide elective	4				
		ENGW 3305	4				
		Outside-criminal-justice elective or sequence	4				
		0		17		8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 3700	4	Outside-criminal-justice elective or sequence	4	Co-op	0
		CRIM 4000	1	Outside-criminal-justice elective or sequence	4		
		Criminal justice advanced elective	4				
		Outside-criminal-justice elective or sequence	4				
		Outside-criminal-justice elective or sequence	4				
		0		17		8	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 4949	4				
		Criminal justice advanced elective	4				
		Criminal justice advanced elective	4				
		0		17		8	

Outside-criminal-justice elective or sequence	4		
		0	16

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 1000	1	CRIM 1200	4	Vacation	0	Vacation	0
CRIM 1100	4	PSYC 1101	4				
ENGW 1111	4	MATH 1215	4				
SOCL 1101	4	Elective	4				
CS 1100	4						
		17		16		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 2100	4	Co-op	0	Co-op	0	Outside-criminal-justice elective or sequence	4
CRIM 2200	4					Outside-criminal-justice elective or sequence	4
CRIM 2000	1						
Outside-criminal-justice elective or sequence	4						
Outside-criminal-justice elective or sequence	4						
		17		0		8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 3600	4	Co-op	0	Co-op	0	Criminal justice advanced elective	4
Criminal justice concentration elective	4					Outside-criminal-justice elective or sequence	4
Criminal justice concentration elective	4						
ENGW 3305	4						
CRIM 3000	1						
		17		0		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 3700	4	Co-op	0	Co-op	0	Vacation	0
Criminal justice system-wide elective	4						
Outside-criminal-justice elective or sequence	4						
Outside-criminal-justice elective or sequence	4						
CRIM 4000	1						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
Criminal justice advanced elective	4	CRIM 4949	4
Outside-criminal-justice elective or sequence	4	Criminal justice advanced elective	4
Outside-criminal-justice elective or sequence	4	Criminal justice advanced elective	4
Outside-criminal-justice elective or sequence	4	Outside-criminal-justice elective or sequence	4
	16		16

Total Hours: 132

Computer Science and Criminal Justice, BS

For students interested in criminal justice in an increasingly digital world, the computer science and criminal justice combined degree offers a strong programming foundation coupled with academic and experiential knowledge of the criminal justice system. Students will learn the principles, practices, and responsibilities of criminal justice professionals alongside the computer science skills necessary for practical applications in the field.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op or CRIM 2000 Co-op Integration Seminar 1	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of upper-division CS, IS, or DS courses that are not already required. Choose courses within the following ranges:	16
CS 2500 or higher, except CS 5010	
IS 2000 or higher, except IS 4900	
DS 2000 or higher, except DS 4900	

Criminal Justice Courses

Code	Title	Hours
Criminal Justice Required Courses		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4
Criminal Justice Required Capstone		
CRIM 4949	Senior Capstone Seminar	4

Thematic Elective

Complete one course from the following:	4
CRIM 1300 The Death Penalty	
CRIM 1400 Human Trafficking	
CRIM 1500 Corruption, Integrity, and Accountability	
CRIM 1700 Crime, Media, and Politics	

Survey Elective

Complete one course from the following:	4
CRIM 3010 Criminal Violence	
CRIM 3030 Global Criminology	
CRIM 3040 Psychology of Crime	
CRIM 3050 Organized Crime	
CRIM 3100 Criminal Law	
CRIM 3200 Youth Crime and Justice	
CRIM 3300 Punishment in the Age of Mass Incarceration	
CRIM 3400 Corporate Security: Securing the Private Sector	
CRIM 3500 Policing a Democratic Society	

System-Wide Elective

Complete one course from the following:	4
CRIM 4010 Gender, Crime, and Justice	
CRIM 4020 Race, Crime, and Justice	

Criminal Justice Elective

Complete one additional CRIM elective.	4
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Integrative Course Requirement

Code	Title	Hours
Complete one course from the following:		4
CRIM 4040	Crime Prevention	
CRIM 4630	Political Crime and Terrorism	
CRIM 4800	Crime Mapping	
CRIM 4900	Advanced Seminar in Criminology and Criminal Justice	

Supporting Course

Code	Title	Hours
Complete one of the following:		4
SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science English Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:	
ENGW 3302	Advanced Writing in the Technical Professions
ENGW 3308	Advanced Writing in the Social Sciences
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines

Required General Electives

Code	Title	Hours
Complete seven general electives.		28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Understanding Societies and Institutions
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, 2 Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 1800 and CS 1802	5	IS 2000	4	CS 3500	4		
CS 2500 and CS 2501	5	CRIM 2100	4				
CRIM 1100	4	CRIM 2200	4				
ENGW 1111	4						
		19		17		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210 or CRIM 2000	1	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
CS 3000	4					Elective	4
CRIM 3600	4						
CJ thematic elective	4						
Elective	4						
		17		0		0	
						8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 1	4	Co-op		Co-op		Elective	4
CRIM 3700	4					Elective	4
CJ survey elective	4						
CS elective 2	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
CS elective 3	4	CS elective 4	4	Elective	4
CJ system-wide elective	4	CRIM 4949	4	Elective	4
CJ elective	4	Elective	4		
Computing and social issues	4	CJ integrative course	4		
	16		16		8

Total Hours: 134

Five Years, 3 Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	IS 2000	4				
CS 2500 and CS 2501	5	CRIM 2100	4				
CRIM 1100	4	CRIM 2200	4				
ENGW 1111	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210 or CRIM 2000	1	Co-op		Co-op		Vacation	
CS 3000	4						
CS 3200	4						
CS 3500	4						
CRIM 3600	4						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 3700	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
CS elective 1	4					Elective	4
CJ thematic elective	4						
CJ survey elective	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	Co-op		Co-op		Elective	4
CJ system-wide elective	4					Elective	4
Elective	4						
Computing and social issues	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CJ integrative course	4	CS elective 4	4
CJ elective	4	CRIM 4949	4
Elective	4	Elective	4
CS elective 3	4	Elective	4
	16		16

Total Hours: 134

Criminal Justice and Philosophy, BS**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Major Requirements

Code	Title	Hours
Criminal Justice Required Courses		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4

Co-op Integration Seminar

Co-op students should complete the seminars below. Non-co-op students should complete a 4-semester-hour CRIM elective.

Complete two of the following courses. CRIM 2000 and CRIM 3000 are required for the first co-op. CRIM 4000 is required if a second co-op is taken.

CRIM 2000	Co-op Integration Seminar 1	2-4
CRIM 3000	Co-op Integration Seminar 2	
CRIM 4000	Co-op Integration Seminar 3	

Capstone

CRIM 4949	Senior Capstone Seminar	4
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Major Electives

Thematic Elective

Complete one of the following: 4

CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	

Survey Elective

Complete one of the following: 4

CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	

System-Wide Electives

CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	

Criminal Justice Elective

Complete one additional CRIM course. 4

Philosophy Requirements

Code	Title	Hours
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Required Courses

PHIL 1115	Introduction to Logic	4
PHIL/POLS 2325	Ancient Philosophy and Political Thought	4
PHIL 2303	Social and Political Philosophy	4
PHIL 2330	Modern Philosophy	4

Intermediate/Advanced Electives

Complete two of the following:

PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	

PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Philosophy 4000/5000 Elective

Complete one of the following not used to satisfy previous requirements: 4

PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Philosophy Electives

Complete two additional PHIL courses. 8

Integrative Requirement

Code	Title	Hours
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Philosophy Integrative Course

PHIL 2301	Philosophical Problems of Law and Justice	4
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Criminal Justice Integrative Course

CRIM 1400	Human Trafficking	4
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Criminal Justice and Philosophy Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Criminal Justice and Political Science, BS

This combined major educates students in criminal justice and political science and in the interface between the two disciplines. The scope and sequence of political science courses provide students with a foundation in topics such as American government, comparative politics, international relations, and security and resilience. Criminal justice courses provide a foundation for understanding individual and systemic aspects of criminology and criminal justice. Students completing this program should be able to understand the relationships between the fields as they relate to understanding and addressing criminal behavior.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Requirements

Code	Title	Hours
Criminal Justice Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
Thematic Electives		
Complete one of the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Elective		
Complete one of the following:		4
CRIM 3010 to CRIM 3500		
System-Wide Elective		
Complete one of the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Mathematics		
Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus I	

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
Political Theory		
Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Research Methods and Electives

Complete Option A, Option B, or Option C, below. *Note:* These options enable the student to take research methods courses (including statistics/quantitative techniques) as either CRIM courses or as POLS courses.

OPTION A

Code	Title	Hours
<i>Research Methods</i>		
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4
<i>Criminal Justice Electives</i>		
Complete two courses in the following range:		8
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete five courses in the following range:		20
POLS 2300 to POLS 5999		

OPTION B

Code	Title	Hours
<i>Research Methods</i>		
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
<i>Criminal Justice Electives</i>		
Complete three courses in the following range:		12
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete four courses in the following range:		20
POLS 2300 to POLS 5999		

OPTION C

Code	Title	Hours
<i>Research Methods</i>		
Complete one of the following sequences:		8
CRIM 3600 and POLS 2400	Criminal Justice Research Methods and Quantitative Techniques	
CRIM 3700 and POLS 2399	Criminal Justice Statistics and Research Methods in Political Science	
<i>Criminal Justice Electives</i>		
Complete two courses in the following range:		8
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete four courses in the following range:		20
POLS 2300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 643).

- American Political Institutions (p. 643)
- Campaigns and Elections (p. 643)
- Identity, Culture, and Politics (p. 643)
- Law and Legal Studies (p. 643)
- Security Studies (p. 643)

Integrative Requirement

Code	Title	Hours
Senior Capstone Requirement		
CRIM 4949 or POLS 4701	Senior Capstone Seminar Political Science Senior Capstone	4

Due Process

CRIM 2100	Criminal Due Process	4
Integrative Elective Courses		
Complete two of the following:		8
CRIM 3100	Criminal Law	
CRIM 4100	Juvenile Law	
CRIM 4120	Courts and Sentencing	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	

POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Criminal Justice and Psychology, BS

This combined major educates students in criminal justice and psychology and the interface between the two disciplines. The scope and sequence of psychology courses provide students with a foundation in the interdisciplinary science of psychology, including the biological and psychosocial bases of behavior, learning, personality, and cognition. Criminal justice courses provide a foundation for understanding individual and systemic aspects of criminology and criminal justice. Students completing this program should be able to understand the relationships between the fields, as they relate to understanding and addressing criminal behavior.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Requirements

Code	Title	Hours
Criminal Justice Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
Thematic Elective		
Complete one of the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Elective		
Complete one of the following:		4
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
System-Wide Elective		
Complete one of the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4040	Crime Prevention	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Mathematics		
Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	
Electives		
Complete three courses in the following range:		8
CRIM 4000 to CRIM 5999		
Psychology Requirements		
Code	Title	Hours
Introductory Course		
PSYC 1101	Foundations of Psychology	4
Statistics		

PSYC 2320	Statistics in Psychological Research	4
Personality/Social Bases of Behavior		
Complete two of the following:		8
PSYC 3400	Personality	
PSYC 3402	Social Psychology	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
Biological/Cognitive Bases of Behavior		
Complete two of the following:		8
PSYC 3450	Learning and Motivation	
or PSYC 3451	Learning Principles and Behavior Analysis	
PSYC 3452	Sensation and Perception	
PSYC 3458	Biological Psychology	
PSYC 3464	Psychology of Language	
PSYC 3466	Cognition	
Research Experience		
Complete one of the following:		4
PSYC 4991	Directed Study Research	
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	
PSYC 4614	Laboratory in Social Psychology	
PSYC 4616	Laboratory in Personality	
PSYC 4622	Laboratory in Sensation and Perception	
PSYC 4624	Laboratory in Affective Science	
PSYC 4626	Laboratory in Life-Span Emotional Development	
Psychology Seminar		
Complete one of the following:		4
PSYC 4650	Seminar in Clinical Case Study	
PSYC 4654	Seminar in Behavioral Modification	
PSYC 4656	Seminar in Biological Psychology	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4660	Seminar in Cognition	
PSYC 4662	Seminar in Personality	
PSYC 4664	Seminar in Social Psychology	
PSYC 4666	Seminar in Clinical Psychology	
PSYC 4668	Seminar in Sensation and Perception	
PSYC 4674	Seminar in Cognitive Neuroscience	
PSYC 4676	Seminar in Developmental Psychology	
PSYC 4678	Seminar in Social and Affective Neuroscience	
Electives		
Complete two PSYC courses.		8
Integrative Requirement		
Code	Title	Hours
CRIM 3040	Psychology of Crime	4
or CRIM 4710	Law and Psychology	
Criminal Justice and Psychology Combined-Major Credit Requirement		
Complete 84 semester hours in the major.		

Program Requirement

128 total semester hours required

Cybersecurity and Criminal Justice, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
or CRIM 1000	Criminal Justice at Northeastern	
CS 1210	Professional Development for CCIS Co-op	1
Discrete Structures		
A grade of C– or higher is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
Computer Science Fundamentals Courses		
A grade of C– or higher is required in each course:		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
Cybersecurity Required Courses		
CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4740	Network Security	4
Cybersecurity Elective		
Complete one of the following:		
CS 2800	Logic and Computation	
CS 4710 or CS 6710	Mobile and Wireless Systems Wireless Network	
CS 5770	Software Vulnerabilities and Security	
CS 4770	Cryptography	
CS 4400	Programming Languages	
CS 4500	Software Development	
CS 4240	Large-Scale Parallel Data Processing	

DS 4300	Large-Scale Information Storage and Retrieval
DS 4400	Machine Learning and Data Mining 1
IA 5200	Security Risk Management and Assessment
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210
IS 4300	Human Computer Interaction
EECE 2160	Embedded Design: Enabling Robotics
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322
EECE 3324	Computer Architecture and Organization
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534
MATH 3527	Number Theory 1
MATH 4575	Introduction to Cryptography
COMM 2551	Free Speech in Cyberspace
LPSC 1101	Introduction to Law
LPSC 2301	Introduction to Law, Policy, and Society
LPSC 3303	Topics in Law and Public Policy
PHIL 1145	Technology and Human Values
POLS 2390	Science, Technology, and Public Policy
POLS 3307	Public Policy and Administration
POLS 3324	Law and Society
POLS 3406	International Law
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3423	Terrorism and Counterterrorism

Computer Science Senior Seminar

THTR 1170	The Eloquent Presenter	1
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Supporting Courses

Code	Title	Hours
MATH 1341	Calculus 1 for Science and Engineering	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		

Complete one of the following:		
ENGW 1111	First-Year Writing	4
ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following:		
ENGW 3302	Advanced Writing in the Technical Professions	4
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Criminal Justice Requirements

Code	Title	Hours
Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4

Thematic Elective

Complete one of the following:		
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	

Survey Elective

Complete one of the following:		
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	

System-Wide Elective

Complete one of the following:		
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	

Criminal Justice Elective

Complete one CRIM course.		
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Criminal Justice Capstone

Complete one of the following:		
CRIM 4949	Senior Capstone Seminar	
CS 4930	Cybersecurity Capstone	
CS 4940	Research Projects on National Security	

Criminal Justice Co-op Integration

Code	Title	Hours
Co-op students should complete at least one of the following courses. CRIM 3000 is required for the first co-op. CRIM 4000 is required if a second co-op is taken:		
CRIM 3000	Co-op Integration Seminar 2	1
CRIM 4000	Co-op Integration Seminar 3	1

Integrative Requirement

Code	Title	Hours
Cybersecurity Integrative Course		
CS 4170	The Law, Ethics, and Policy of Data and Digital Technologies	4
or IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

Criminal Justice Integrative Course

Complete one of the following:		
CRIM 4040	Crime Prevention	
CRIM 4630	Political Crime and Terrorism	
CRIM 3050	Organized Crime	

CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
CRIM 5900	Topics in Criminal Justice and Criminology	

Required General Electives

Code	Title	Hours
Complete six general electives.		

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Program Requirement

133 total semester hours required.

Human Services and Criminal Justice, BS

A combined major in human services and criminal justice appeals to students interested in the intersection of social and legal issues and institutions. The human services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. Students with criminal justice course work gain a rigorous interdisciplinary and experiential education in the causes and consequences of crime and the responses of criminal justice. The addition of human services course work complements a criminal justice perspective and considers the role of social services and community-based organizations to prevent, intervene, and treat the causes and consequences of crime. The degree allows students to combine interests in the justice system, political advocacy, and community development. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Foundation Courses

Code	Title	Hours
Introduction to the Major		
CRIM 1000	Criminal Justice at Northeastern	1
or HUSV 1000	Human Services at Northeastern	

Criminal Justice Foundation Courses

CRIM 1100	Introduction to Criminal Justice	4
CRIM 1300	The Death Penalty	4
or CRIM 1400	Human Trafficking	
or CRIM 1500	Corruption, Integrity, and Accountability	
or CRIM 1700	Crime, Media, and Politics	
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CS 1100	Computer Science and Its Applications	4
Human Services Foundation Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4

Upper-Level Courses

Code	Title	Hours
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Policy Course

HUSV 3900	Introduction to Social Policy	4
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Organization Course

SOCL 3440	Sociology of Human Service Organizations	4
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Survey Electives

Complete two of the following: 8

CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	

Research Methods

CRIM 3600	Criminal Justice Research Methods	4
or HUSV 3700	Research Methods for Human Services	

Criminal Justice Elective

Complete one of the following: 4

CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4040	Crime Prevention	

Statistics

Complete one of the following: 4

CRIM 3700	Criminal Justice Statistics	
PSYC 2320	Statistics in Psychological Research	
SOCL 2320	Statistical Analysis in Sociology	

Human Services Internship

Code	Title	Hours
HUSV 4994	Human Services Internship	6

Integrative Course

Code	Title	Hours
CRIM 4949	Senior Capstone Seminar	4
or HUSV 4700	Senior Seminar in Human Services	

Open Electives

Code	Title	Hours
Complete seven courses. Two of these courses must be in criminal justice and four must be in human services.		28

Cooperative Education for Criminal Justice

Code	Title	Hours
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Co-op Integration Seminar 1/Professional Development

All students should complete one of the following: 1

CRIM 2000	Co-op Integration Seminar 1	
EESH 2000	Professional Development for Co-op	

Co-op Integration Seminars 2 and 3

Co-op students should complete the following:

CRIM 3000	Co-op Integration Seminar 2	1
CRIM 4000	Co-op Integration Seminar 3	1

Non-co-op students should complete an additional 2 semester hours of open elective credit.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	CRIM 1200	4	Vacation	0	Vacation	0
CRIM 1100	4	HUSV 2300	4				
HUSV 1101	4	CS 1100	4				
ENGW 1111	4	HSVC elective	4				
MATH 1215	4						
		17		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 2100	4	CRIM 2000	1	Vacation	0	Co-op	0
CRIM 2200	4	CJ concentration elective	4				
HSVC intermediate/advanced undergraduate elective	4	CJ concentration elective	4				
Elective	4	Elective	4				
		16		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 3000	1	CRIM 3600	4	Co-op	0
		Elective		4		4	
		HUSV 3900		4			

HSVC organization course	4			
	0	13	8	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 4000	1	Elective	4	Co-op	0
		CJ system-wide elective	4	Elective	4		
		ENGW 3315	4				
		Elective	4				
		CRIM 3700	4				
	0		17		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	HUSV 4994	6
		Elective	4
		CRIM 4949 or HUSV 4700	4
		Elective	4
	0		18

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	CRIM 1200	4	Vacation	0	Vacation	0
CRIM 1100	4	HUSV 2300	4				
HUSV 1101	4	CS 1100	4				
ENGW 1111	4	HSVC elective	4				
MATH 1215	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 2100	4	Co-op	0	Co-op	0	Elective	4
CRIM 2200	4					Elective	4
CRIM 2000	1						
HUSV 2300	4						
Elective	4						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CJ concentration elective	4	Co-op	0	Co-op	0	Elective	4
CJ concentration elective	4					HUSV 3900	4
Elective	4						
Elective	4						
CRIM 3000	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 3600	4	Co-op	0	Co-op	0	Vacation	0
HSVC organization course	4						
CJ system-wide elective	4						
Elective	4						
CRIM 4000	1						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
CRIM 3700	4	Elective	4
HUSV 4994	6	Elective	4
ENGW 3315	4	CRIM 4949 or HUSV 4700	4
Elective	4	Elective	4
	18		16

Total Hours: 134

Criminal Justice, Minor

Minors in the School of Criminology and Criminal Justice (SCCJ) take the foundational courses in criminology and criminal justice. Minors can also specialize further in their elective courses. These may include courses covering topics such as policing democratic societies, corporate security, punishment and mass incarceration, and juvenile justice. A minor in criminology and criminal justice in combination with a student's major can enhance the student's career possibilities and open new avenues for research experiences.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4

Criminal Justice Electives

Code	Title	Hours
Complete two of the following:		8
CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	

CRIM 3500	Policing a Democratic Society
CRIM 4010	Gender, Crime, and Justice
CRIM 4020	Race, Crime, and Justice
CRIM 4040	Crime Prevention
CRIM 4100	Juvenile Law
CRIM 4120	Courts and Sentencing
CRIM 4500	Police Strategy
CRIM 4630	Political Crime and Terrorism
CRIM 4710	Law and Psychology

GPA Requirement

2.000 GPA required in the minor

Cultures, Societies, and Global Studies

The Department of Cultures, Societies, and Global Studies is an open and dynamic academic platform for interdisciplinary research and teaching on the transformative power of culture as an instrument for social change and innovation. We approach the challenges facing humanity through perspectives that are primarily, though not exclusively, informed by the experiences of the peoples from the Global South (Africa, Asia, the Caribbean, and Latin America) and its diasporas. As we search for the tools to foster sustainable economic growth and social well-being on a global scale, we aim to reevaluate and learn from the historical experiences, belief systems, intellectual traditions, and pressing concerns of the greater part of the world's population. This requires a critical reexamination of the persistence of Eurocentric postulates that were developed to support modern colonialism and nationalism with their variegated world of "otherness". As such, we adhere to the broadest and most inclusive definition of languages and cultures as we aim to understand, shape, and thrive in a global community characterized by increased social connectivity, economic integration, intellectual exchange, and cultural hybridity. Indeed, **we are your gateway to the languages and peoples of the world** and we have the broadest selection of majors (<https://www.northeastern.edu/cssh/csgs/majors-csgs>) and minors (<https://www.northeastern.edu/cssh/csgs/minors-csgs>) in Northeastern!

Programs

Bachelor of Arts (BA)

- African-American Studies (p. 649)
- Spanish (p. 653)
- Spanish and International Affairs (p. 654)
- Religious Studies and African-American Studies (p. 651)

Bachelor of Science (BS)

- African-American Studies (p. 658)
- American Sign Language (p. 660)
- American Sign Language and Human Services (p. 661)
- American Sign Language and Linguistics (p. 504)
- American Sign Language and Psychology (p. 611)
- American Sign Language and Theatre (p. 208)

Minors

- African Studies (p. 666)
- African-American Studies (p. 666)
- American Sign Language (p. 667)
- Arabic (p. 667)

- Chinese (p. 667)
- Film and International Cultures (p. 668)
- French (p. 669)
- Italian (p. 669)
- Japanese (p. 669)
- Portuguese (p. 670)
- Russian (p. 670)
- Spanish (p. 671)

African-American Studies, BA

African-American studies is an interdisciplinary field of study devoted to the critical and systematic examination of the cultural, political, social, economic, and historical experiences of Africans, African-Americans throughout the hemisphere, and peoples of African descent around the world. Because African-American studies relates to numerous other fields, the number of required courses for the major is relatively small to allow maximum flexibility. Our students often pursue a double major, a combined degree, or a minor in another subject. By combining study in African-American studies with experiential learning through co-op, study abroad, and/or Dialogues of Civilizations programs, you have an opportunity to obtain practical experience that will give you greater flexibility upon graduation. Moreover, the reading, writing, and analytical skills you will develop will prove useful and valuable in any profession.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

African-American Studies Major Requirements

Code	Title	Hours
Introductory Courses		
AFAM 1101	Introduction to African-American Studies	4
AFAM 1109	Foundations of Black Culture 1	4
AFRS 1185	Gender in the African Diaspora	4
Literature		
AFAM 4663		4
Research and Seminar		
AFRS 3310		4

AFAM 4700	4
Electives	
Complete six African-American studies courses at the intermediate and advanced level from the following:	24
AFAM 2000 to AFAM 5999	
AFRS 2000 to AFRS 5999	

African-American Studies Major Credit Requirement

Complete 48 semester hours in the major.

Upper-Division Electives

Complete three general electives numbered 3000 or above that do not double-count with the major or NUpath.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM 1101	4	AFRS 1185	4	Vacation	0	Vacation	0
AFAM 1109	4	AFAM 4663	4				
MATH 1215	4	AFRS 3310	4				
ENGW 1111	4	Elective	4				
	16		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM intermediate/advanced undergraduate elective	4	AFAM intermediate/advanced undergraduate elective	4	Vacation	0	Co-op	0
Foreign language course	4	Foreign language course	4				
AFAM intermediate/advanced undergraduate elective	4	AFAM intermediate/advanced undergraduate elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
	16		17		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	AFAM 4700	4	Elective	4	Co-op	0
		ENGW 3315	4	Upper-division elective	4		
		AFAM intermediate/advanced undergraduate elective	4				
		Foreign language course	4				
	0		16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		Elective	4	Elective	4		
		AFAM intermediate/advanced undergraduate elective	4				
		Upper-division elective	4				
	0		16		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	Elective	4
		Elective	4
		Upper-division elective	4
		Elective	4
	0		16

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM 1101	4	AFRS 1185	4	Vacation	0	Vacation	0
AFAM 1109	4	AFAM 4663	4				
MATH 1215	4	AFRS 3310	4				
ENGW 1111	4	Elective	4				
	16		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM intermediate/advanced undergraduate elective	4	Co-op	0	Co-op	0	Elective	4
Foreign language course	4					Elective	4
AFAM intermediate/advanced undergraduate elective	4						
Elective	4						
EESH 2000	1						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM intermediate/advanced undergraduate elective	4	Co-op	0	Co-op	0	Elective	4

Foreign language course	4	Elective	4
AFAM intermediate/advanced undergraduate elective	4		
Upper-division elective	4		
	16	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM 4700	4	Co-op	0	Co-op	0	Vacation	0
ENGW 3315	4						
AFAM intermediate/advanced undergraduate elective	4						
Foreign language course	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Elective	4	Elective	4
Elective	4	Elective	4
AFAM intermediate/advanced undergraduate elective	4	Upper-division elective	4
Upper-division elective	4	Elective	4
	16		16

Total Hours: 129

Religious Studies and African-American Studies, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Religious Studies Major Requirements

Code	Title	Hours
Comparative Religion		
Complete two of the following:		8
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 4390	Cults and Sects	
Ancient Mediterranean and African World Traditions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
JWSS 1285	Jewish Religion and Culture	
PHIL 1287	Modern Judaism	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2314	Biblical Prophets and Their Interpreters	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2316	Interpreting the Bible	
PHIL 4390	Cults and Sects	
Asian Traditions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 2398	Religion and Culture in Indian Cinema	

PHIL 4545	Religion and Politics in South Asia
PHIL 4393	Asian Religions in the United States

Religion and Culture

Complete one of the following: 4

PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1260	Apocalypticism in Film
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1285	Jewish Religion and Culture
JWSS 1285	Jewish Religion and Culture
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 4390	Cults and Sects

Ethics

Complete one of the following: 4

PHIL 1130	Ethics: East and West
PHIL 1272	Ethics in the World's Religions
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 5011	Comparative Religious Ethics

Religious Studies Electives

Complete three religious studies electives, two of which must be above the 2000 level: 12

PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL 1110	Introduction to Religion
PHIL 1111	Introduction to World Religions
PHIL 1120	Understanding the Bible
PHIL 1130	Ethics: East and West
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1231	Image and Icon in South Asia
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies
PHIL 1260	Apocalypticism in Film
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1273	Jainism
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions

PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1281	Islam, Gender, and Fashion
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Advanced Elective

Complete one of the following: 4

PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4606	Seminar: Theories and Methods in Religious Studies

PHIL 4547	Seminar: Apocalypticism
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 5011	Comparative Religious Ethics

African-American Studies Requirements

Code	Title	Hours
Introductory Courses		
AFAM 1101	Introduction to African-American Studies	4
AFAM 1109	Foundations of Black Culture 1	4
AFRS 1185	Gender in the African Diaspora	4
CLTR 1509		
Research		
AFRS 3310		
Senior Capstone		
AFAM 4700		
Electives		
Complete three AFAM or AFRS courses at the 2000 level or above.		12
Note: Electives may not double count for other AFAM or HIST combined-major requirements.		
AFAM 2000 to AFAM 5999		
AFRS 2000 to AFRS 5999		

Integrative Requirement

Code	Title	Hours
Complete one of the following:		4
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas	
PHIL 3410	Religion and Spirituality in the African Diaspora	
PHIL 4390	Cults and Sects	

Program Requirement

128 total semester hours required

Spanish, BA

Spanish is the second most spoken language in the world. It is used in more than twenty countries, including the United States. In fact, in terms of the number of speakers, the United States is the second largest Spanish-speaking country in the planet. Being a Spanish speaker is a major professional and cultural asset as it prepares you to be successful in any career path. Yet, in our society, knowing Spanish is not just an asset; it is increasingly a necessity. Not only does proficiency in Spanish prepare you to be a leader in a country where Hispanics are the fastest growing segment of the population and where Spanish-speakers are the vast majority of the population in the hemisphere. Knowing Spanish also makes you a truly global citizen. Our Spanish BA certifies that you have attained advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Spanish Major Requirements

Code	Title	Hours
Language Requirements		
SPNS 2102	Intermediate Spanish 2	4
or SPNS 2302	Intermediate Spanish Immersion 2	
SPNS 3101	Advanced Spanish 1	4
or SPNS 3301	Advanced Spanish Immersion 1	
SPNS 3102	Advanced Spanish 2	4
or SPNS 3302	Advanced Spanish Immersion 2	
Language and Linguistics		
CLTR 1120	Introduction to Languages, Literature, and Culture	4
LING 1150	Introduction to Language and Linguistics	4
Culture		
Complete four of the following:		16
CLTR 1240	Latin American Film	
CLTR 1504	Introduction to Spanish Culture	
CLTR 1505	Introduction to Latin American Culture	
CLTR 3725	Representing Violence and Human Rights in Latin America	
Literature		
Complete three of the following:		12
CLTR 3715	New Narratives: Latin America after 1989	
LITR 4561	Masterpieces of Spanish Literature: 12th–17th Century	
LITR 4560	Masterpieces of Spanish Literature: 18th–20th Century	
LITR 4655	Latin American Literature	
Spanish Seminar		
LANG 4800	Special Topics in Language	4
Study Abroad/Experiential Learning		
See department for details.		
Capstone		
LANG 4700	Capstone Seminar	4

Spanish Major Credit Requirement

Complete 53 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	CLTR 1120	4	Vacation	0	Vacation	0
MATH 1215	4	NUpath course or elective	4				
SPNS 2101	4	NUpath course or elective	4				
CLTR 1504	4	SPNS 2102	4				
LANG 1000	1						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SPNS 3101	4	CLTR 1505	4	Vacation	0	Co-op	0
CLTR 1240	4	LITR 3502	4				
LING 1150	4	NUpath course or elective	4				
NUpath course or elective	4	SPNS 3102	4				
		EESH 2000	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Study abroad	16	ENGW 3315	4	Co-op	0
				NUpath course or elective	4		
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	LITR 4655	4	NUpath course or elective	4	Co-op	0
		LITR 4560	4	NUpath course or elective	4		
		NUpath course or elective	4				
		NUpath course or elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	LANG 4700	4
		LITR 4561	4
		LANG 4800	1-4
		NUpath course or elective	4
		NUpath course or elective	4
	0		17-20

Total Hours: 131-134

Spanish and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international issues since the 19th century through diverse and cross-disciplinary theories of: (1) Interstate relations: conflict, cooperation, hierarchies; (2) Civil society, transnational advocacy networks, global social movements; and (3) the politics of culture, linguistic and cultural diversity, religious and ideological divides; (4) State-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Spanish Language Requirements

Code	Title	Hours
SPNS 2101	Intermediate Spanish 1	
SPNS 2102	Intermediate Spanish 2	
SPNS 3101	Advanced Spanish 1	

Spanish Culture

CLTR 1120	Introduction to Languages, Literature, and Culture	4
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Spanish Literature

Complete one of the following courses in the language of your major:	4
LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century	
LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century	

Advanced Spanish Language

Complete two of the following courses in the appropriate language while on study abroad:	8
SPNS 2101 to SPNS 5999	
LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century	
LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century	
LITR 4655 Latin American Literature	

Spanish Language Electives

Complete three of the following courses in the language of your major with course numbers 2990 or above:	12
SPNS 2990 to SPNS 3990	
LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century	
LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century	
LITR 4655 Latin American Literature	

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4

Global Dynamics

Complete three of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.

Environment

ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society

Law, Diplomacy, and Global Governance

INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law

POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
INTL 2480 or INTL 2480	Women and World Politics Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice

Conflict and Security

CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3430	Revolution, Civil War, and Insurrection

POLS 3420	U.S. National Security Policy	4
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Globalization

INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Complete three of the following courses, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:

Code	Title	Hours
Africa		
AFRS 2307	Africa Today	

AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History

LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature
Middle East	
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

Integrative Courses

Code	Title	Hours
Capstone		
LITR 3500	International Perspectives	4
INTL 4700	Senior Capstone Seminar in International Affairs	4

Spanish and International Affairs Combined-Major Credit/GPA Requirements

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
ENGW 1111	4	ECON 1115 or 1116	4				
INTL 1101	4	Elective	4				
CLTR 1120	4	SPNS 2102	4				
SPNS 2101	4						
		17			16		
				0			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL elective	4	INTL elective	4	Vacation	0	Co-op	0
Elective	4	Elective	4				
Elective	4	Spanish elective 3000-5000	4				
SPNS 3101	4						
		16			12		
				0			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL elective	4	INTL elective	4	Co-op	0
		INTL elective	4	Upper division elective	4		
		Advanced literature/cultural course	4				
		Advanced literature/cultural course	4				
		0			16		
				8			0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Upper division elective	4	Co-op	0
		INTL 3400	4	INTL elective	4		
		Elective	4				
		Spanish elective 3000-5000	4				
		0			16		
				8			0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	INTL 4700	4
		Upper division elective	4
		LITR 3500	4
		Spanish elective 3000-5000	4
		0	16

Total Hours: 125

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
ENGW 1111	4	ECON 1115 or 1116	4				
INTL 1101	4	Elective	4				
CLTR 1120	4	SPNS 2202	4				

SPNS 2101	4						
	17		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	INTL elective	4
Spanish elective 3000-5000	4					Elective	4
SPNS 3101	4						
	12		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL elective	4	Co-op	0	Co-op	0	INTL elective	4
INTL elective	4					Upper division elective	4
Advanced literature/cultural course	4						
Advanced literature/cultural course	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
ENGW 3315	4						
Elective	4						
Spanish elective 3000-5000	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours				
INTL elective	4	INTL elective	4				
Upper division elective	4	INTL 4700	4				
Elective	4	Upper division elective	4				
Spanish elective 3000-5000	4	LITR 3500	4				
	16		16				

Total Hours: 125

African-American Studies, BS

African-American studies is an interdisciplinary field of study devoted to the critical and systematic examination of the cultural, political, social, economic, and historical experiences of Africans, African-Americans throughout the hemisphere, and peoples of African descent around the world. Because African-American studies relates to numerous other fields, the number of required courses for the major is relatively small

to allow maximum flexibility. Our students often pursue a double major, a combined degree, or a minor in another subject. By combining study in African-American studies with experiential learning through co-op, study abroad, and/or Dialogues of Civilizations programs, you have an opportunity to obtain practical experience that will give you greater flexibility upon graduation. Moreover, the reading, writing, and analytical skills you will develop will prove useful and valuable in any profession.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

African-American Studies Major Requirements

Code	Title	Hours
Introductory Courses		
AFAM 1101	Introduction to African-American Studies	4
AFAM 1109	Foundations of Black Culture 1	4
AFRS 1185	Gender in the African Diaspora	4
Literature		
AFAM 4663		4
Research and Seminar		
AFRS 3310		4
AFAM 4700		4
Electives		
	Complete six African-American studies courses at the intermediate and advanced level from the following:	24
	AFAM 2000 to AFAM 5999	
	AFRS 2000 to AFRS 5999	

African-American Studies Major Credit Requirement

Complete 48 semester hours in the major.

Upper-Division Electives

Code	Title	Hours
	Complete three general electives numbered 3000 or above that do not double-count with the major or NUpath.	12

Program Requirements

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AFAM 1101	4	AFRS 1185	4	Vacation	0	Vacation	0
AFAM 1109	4	AFAM 4663	4				
MATH 1215	4	AFRS 3310	4				

ENGW 1111	4	Elective	4			
	16		16	0	0	
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
AFAM intermediate/advanced undergraduate elective	4	AFAM intermediate/advanced undergraduate elective	4	Vacation	0	Co-op
Elective	4	Elective	4			
AFAM intermediate/advanced undergraduate elective	4	AFAM intermediate/advanced undergraduate elective	4			
Elective	4	Elective	4			
		EESH 2000	1			
	16		17	0	0	
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	AFAM 4700	4	Elective	4	Co-op
		ENGW 3315	4	Elective	4	
		AFAM intermediate/advanced undergraduate elective	4			
		Elective	4			
	0		16	8	0	
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	AFAM intermediate/advanced undergraduate elective	4	Elective	4	Co-op
		Upper-division elective	4	Elective	4	
		Elective	4			
		Elective	4			
	0		16	8	0	
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	Upper-division elective	4			
		Upper-division elective	4			
		Elective	4			
		Elective	4			
	0		16			

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
AFAM 1101	4	AFRS 1185	4	Vacation	0	Vacation
AFAM 1109	4	AFAM 4663	4			
MATH 1215	4	AFRS 3310	4			
ENGW 1111	4	Elective	4			
	16		16	0	0	
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
AFAM intermediate/advanced undergraduate elective	4	Co-op	0	Co-op	0	Elective
Elective	4					Elective
AFAM intermediate/advanced undergraduate elective	4					
Elective	4					
EESH 2000	1					
	17		0	0	0	8
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
AFAM intermediate/advanced undergraduate elective	4	Co-op	0	Co-op	0	Elective
Elective	4					Elective
Elective	4					
AFAM intermediate/advanced undergraduate elective	4					
	16		0	0	0	8
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
AFAM 4700	4	Co-op	0	Co-op	0	Vacation
ENGW 3315	4					
AFAM intermediate/advanced undergraduate elective	4					
Elective	4					
	16		0	0	0	8
Year 5						
Fall	Hours	Spring	Hours			
Upper-division elective	4	Upper-division elective	4			
AFAM undergraduate elective	4	Upper-division elective	4			

Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

American Sign Language, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

The ASL Program offers a wide array of courses as well as volunteer, internship, and practicum opportunities. For students wishing to pursue a degree in ASL/English Interpretation, the Program is committed to providing opportunities that will allow them to acquire the linguistic, cognitive, and ethical decision-making skills as well as the socio-cultural knowledge necessary to serve as professional ASL/English interpreters. Students pursuing a combined major in Psychology, Theater, or Human Services integrate their foundation in ASL and the Deaf Community with these academic disciplines.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Major Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
AMSL 3102	Advanced ASL 2	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		

LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3550	Performance Interpreting—Interpreting for the Theatre	4
Intpreting		
INTP 3500	The Interpreting Profession	2
INTP 3510	Interpreting Inquiry Texts	4
INTP 3515	Interpreting Narrative Texts	4
INTP 4510	Interpreting Expository Texts	4
INTP 4515	Interpreting Persuasive Texts	4
Interpreting Practicum		
INTP 4995	Interpreting Practicum	4
Ethics		
INTP 4650	Ethical Decision Making	4
INTP 4651	Ethical Fieldwork	2
Research Capstone		
INTP 4940	Interpreting Research Practicum	4

American Sign Language Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

American Sign Language Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DEAF 1500	4	AMSL 1102	4	Vacation	0	Vacation	0
AMSL 1101	4	MATH 1215	4				
ENGW 1111	4	Elective	4				
INTP 1000	1	Elective	4				
Elective	4						
	17		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DEAF 2500	4	AMSL 2102	4	Vacation	0	Vacation	0
AMSL 2101	4	DEAF 2700	4				
LING 1150	4	Elective	4				
Elective	4	Elective	4				
	16		16		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTP 3500	2	INTP 3515	4	Vacation	0	Vacation	0
INTP 3510	4	INTP 3550	4				
ENGW 3315	4	AMSL 3102	4				
AMSL 3101	4	Elective	4				
	14		16		0		0

Year 4			
Fall	Hours	Spring	Hours
INTP 4650	4	INTP 4515	4
INTP 4510	4	INTP 4995	4
INTP 4651	2	Elective	4
INTP 4940	4	Elective	4
Elective	4		
		18	16

Total Hours: 129

American Sign Language and Human Services, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

The ASL Program offers a wide array of courses as well as volunteer, internship, and practicum opportunities. Students pursuing a combined major in Human Services integrate their foundation in ASL and the Deaf Community with Human Service organizations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
AMSL 3102	Advanced ASL 2	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		

LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3500	The Interpreting Profession	2
Interpreting		
INTP 3510	Interpreting Inquiry Texts	4

Human Services Requirements

Code	Title	Hours
Human Services		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 4700	Senior Seminar in Human Services	4
Research		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organizations		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services Elective		
Complete one course in HUSV subject area.		4

Integrative Requirement

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
HUSV 4994	Human Services Internship	6

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirements

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	MATH 1215	4				
HUSV 1101	4	HSVC	4				
		elective					
ENGW 1111	4	Elective	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0
LING 1150	4	DEAF 2700	4				

INTP 4560	4	HUSV 2300	4
Elective	4	Elective	4
	16		16

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DEAF 2500	4	HUSV 3700	4	Vacation	0	Vacation	0
SOCL 3440	4	Elective	4				
INTP 3510	4	ENGW 3315	4				
AMSL 3101	4	AMSL 3102	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
INTP 4940	4	HUSV 4700	4
HUSV 3900	4	Elective	4
HUSV 4994	6	Elective	4
Elective	4	Elective	4
	18		16

Total Hours: 130

American Sign Language and Linguistics, BS

The American Sign Language (ASL) & Linguistics combined major is an intensive program of study dedicated to preparing students to interact in a positive and supportive manner with members of the American Deaf Community while simultaneously providing students with an understanding of the theoretical, cultural, and social components of all human language, including ASL, so that they can better understand how ASL is related to spoken languages and other signed languages. This curriculum is designed to assist students in acquiring competence in American Sign Language; and in developing an understanding of the American Deaf Community and its culture, the acquisition and analysis of human languages (signed and spoken), and how human languages work in everyday use (e.g., comprehension, generation, translation).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
Language Requirement		
AMSL 1101	Elementary ASL 1	4

AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4

Social and Cultural World

DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4

Interpreting

INTP 3500	The Interpreting Profession	2
INTP 3510	Interpreting Inquiry Texts	4

Linguistics Requirements

Code	Title	Hours
Core Linguistics Requirements		
LING 1150	Introduction to Language and Linguistics	4
LING 2350	Linguistic Analysis	4
LING 3422	Phonology	4
LING 3424	Morphology	4
	or LING 3452 Semantics	
LING 3450	Syntax	4

Psychology of Language

PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3464	Psychology of Language	4

Electives

Complete two courses from the following:		8
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
LING 4970	Junior/Senior Honors Project 1	
LING 4971	Junior/Senior Honors Project 2	
LING 4991	Directed Study Research	
PSYC 4520	Language and the Brain	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	
PSYC 4991	Directed Study Research	

Seminar Requirement

Complete one course (not counted elsewhere) from the following:		4
LING 4654	Seminar in Linguistics	
LING 4891	Research Seminar in Linguistics	
PSYC 4658	Seminar in Psycholinguistics	

Integrative Courses

Code	Title	Hours
DEAF 2700	ASL Linguistics	4
INTP 4940	Interpreting Research Practicum	4
LING 3412	Language and Culture	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 92 semester hours in the major.

Program Requirements

128 total semester hours required

Plan of Study

Sample, Four Years

Year 1			
Fall	Hours	Spring	Hours
AMSL 1101	4	AMSL 1102	4
DEAF 1500	4	LING 2350	4
LING 1150	4	LING 3412	4
NUpath/Elective	4	NUpath/Elective	4
		16	16
Year 2			
Fall	Hours	Spring	Hours
AMSL 2101	4	AMSL 2102	4
DEAF 2500	4	DEAF 2700	4
PSYC 1101	4	PSYC 2320	4
NUpath/Elective	4	NUpath/Elective	4
		16	16
Year 3			
Fall	Hours	Spring	Hours
AMSL 3101	4	LING 3450	4
INTP 3500	2	LING 3424 or 3452	4
INTP 3510	4	PSYC 3464	4
LING 3422	4	NUpath/Elective	4
NUpath/Elective	4		
		18	16
Year 4			
Fall	Hours	Spring	Hours
INTP 4940	4	Linguistics Seminar	4
Linguistics Elective	4	Linguistics Elective	4
NUpath/Elective	4	NUpath/Elective	4
NUpath/Elective	4	NUpath/Elective	4
		16	16

Total Hours: 130

American Sign Language and Psychology, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf

Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		
LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3500	The Interpreting Profession	2
Interpreting		
INTP 3510	Interpreting Inquiry Texts	4

Psychology Requirements

Code	Title	Hours
Psychology		
PSYC 1101	Foundations of Psychology	4
PSYC 2320	Statistics in Psychological Research	4
PSYC 3466	Cognition	4
Psychology Lab or Directed Study		
Complete one of the following:		4
PSYC 4600	Laboratory in Research Design	
PSYC 4606	Laboratory in Biological Psychology	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4612	Laboratory in Cognition	

PSYC 4614	Laboratory in Social Psychology
PSYC 4616	Laboratory in Personality
PSYC 4622	Laboratory in Sensation and Perception
PSYC 4624	Laboratory in Affective Science
PSYC 4626	Laboratory in Life-Span Emotional Development
PSYC 4991	Directed Study Research

Personal/Social Bases of Behavior (Area A)

Complete two of the following: 8

PSYC 3400	Personality
PSYC 3402	Social Psychology
PSYC 3404	Developmental Psychology
PSYC 3406	Abnormal Psychology

Biological/Cognitive Bases of Behavior (Area B)

Complete one of the following: 4

PSYC 3450	Learning and Motivation
PSYC 3451	Learning Principles and Behavior Analysis
PSYC 3452	Sensation and Perception
PSYC 3458	Biological Psychology

Psychology Elective

Complete one of the following: 4

PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience

Integrative Requirements

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
PSYC 3464	Psychology of Language	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 82 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study**Four Years, No Co-op****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	MATH 1215	4				
PSYC 1101	4	Elective	4				
ENGW 1111	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0

LING 1150	4	DEAF 2700	4
DEAF 2500	4	PSYC 2320	4
Elective	4	PSYC 3464	4
	16		16
			0
			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 3101	4	PSYC 4524	4	Vacation	0	Vacation	0
Psych Area A elective	4	Psych Area B elective	4				
ENGW 3315	4	Elective	4				
INTP 3510	4	AMSL 3102	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
INTP 4940	4	Psych lab elective	4
PSYC 4658	4	Psych Area A elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 128

American Sign Language and Theatre, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

This major is designed for students who want to combine an understanding of the American Deaf Community and its culture to the study and making of theatre, including performance, design, and production. It offers both classroom and experiential learning on the creative, social, and linguistic relationship between theatre and the American Deaf Community. Students may study acting, dramatic literature, and production design to develop the skills to be professional ASL/English interpreters and/or performers for theatrical productions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		
LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3550	Performance Interpreting—Interpreting for the Theatre	4
Interpreting		
INTP 3500	The Interpreting Profession	2

Theatre Requirements

Code	Title	Hours
Theatre		
A grade of C or higher is required for all theatre courses.		
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Choose one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
Intermediate or Advanced Technique		
Choose two of the following:		8
THTR 2300	Classics of Global Theatre	
THTR 2310	History of Musical Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2330	Playwriting	
THTR 2340	Theatre and Society	

THTR 2342	Acting 2
THTR 2345	Acting for the Camera
THTR 2346	Viewpoints
THTR 2370	Lighting Design
THTR 2380	Costume Design
THTR 2400	Scenic Design
THTR 2600	Voice and Speech for the Actor
THTR 3450	Acting 3—Playing Shakespeare
THTR 3550	Directing for the Stage
THTR 3570	Musical Theatre Performance

Integrative Requirement

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
THTR 4702	Capstone Rehearsal and Performance	4

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses
 Minimum 2.500 overall GPA required

Combined-Major Credit/Grade Requirement

Complete 88 semester hours in the major. A minimum grade of C is required for all theatre courses.

Program Requirement

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	THTR 1120	4				
THTR 1101	4	MATH 1215	4				
ENGW 1111	4	Elective	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0
LING 1150	4	DEAF 2700	4				
DEAF 2500	4	THTR 1131	4				
THTR 1270	4	Elective	4				
		16			16	0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTP 4560	4	THTR 1260	4	Vacation	0	Vacation	0
THTR 2325	4	INTP 3550	4				
THTR 3700	4	THTR 2300	4				
INTP 3510	4	AMSL 3102	4				
		16			16	0	
Year 4							
Fall	Hours	Spring	Hours				
THTR 1100	1	Elective	4				
ENGW 3315	4	Elective	4				
THTR 3550	4	INTP 4940	4				

Elective	4 THTR 2000	1
Elective	4 Elective	4
	17	17

Total Hours: 130

African Studies, Minor

The mission of the African and African-American Studies Program is to mentor intellectual leaders, to develop emerging scholars, and to train global citizens who are able to explore the world from diverse perspectives in an ever increasingly global and interdisciplinary world. In our experiential liberal arts education model, students study culture, history, politics, and society as they relate to African and African-American studies to cultivate their thinking, reading, and writing skills through interdisciplinary class-based and experiential learning opportunities. Some of the major areas of interest and research of our faculty include the public humanities and public policy, critical race theory and empire/colonialism, criminal justice and carceral state, global public health and neglected tropical diseases, gender, sexuality, and women's studies.

Through rigorous study, co-op, study abroad, Dialogue of Civilizations, and service-learning, students have an opportunity to acquire use-inspired knowledge and competencies that will equip them with endless possibilities to flexibly fit any profession and graduate studies they may pursue in the social sciences and humanities.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
AFRS 1101	Introduction to African Studies (A grade of C or higher is required)	4

Social Sciences

Code	Title	Hours
Complete two of the following: 8		
AFRS 1185	Gender in the African Diaspora	
AFRS 2307	Africa Today	
AFRS 2414	Global Revolution	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
INTL 3565	Morocco: History, Cultures, and Economic Development in the Mediterranean Basin	
POLS 3487	Politics of Developing Nations	

Humanities

Code	Title	Hours
AFAM 1109	Foundations of Black Culture 1	4
AFRS 1180	African History	4

GPA Requirement

2.000 GPA required in the minor

African-American Studies, Minor

African-American studies is an interdisciplinary field of study devoted to the critical and systematic examination of the cultural, political, social, economic, and historical experiences of Africans and African-Americans throughout the hemisphere, and peoples of African descent around the world. Because African-American studies relates to numerous other fields, our minor affords you maximum flexibility. By combining study in African-American studies with experiential learning through co-op, study abroad, and/or Dialogues of Civilizations programs you can get practical experience that will give you greater flexibility upon graduation. Moreover, the reading, writing and analytical skills you will develop will prove useful and valuable in any profession.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
AFAM 1101	Introduction to African-American Studies	4

Electives

Code	Title	Hours
Social Sciences		
Complete two of the following:		8
AFAM 1140	Introduction to African-American History	
AFAM 1225	Gender, Race, and Medicine	
AFAM 2360	Politics of Poverty	
AFAM 2399	Black Community and Social Change	
AFAM 2549	Public Policy and Black America	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
AFAM 2639	Globalism, Racism, and Human Rights	
AFRS 1185	Gender in the African Diaspora	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	

Humanities

Complete two of the following:		8
AFAM 1104	The African-American Experience through Music	
AFAM 1109	Foundations of Black Culture 1	
AFAM 1113	Black Popular Culture: Music, Movies, and More	

GPA Requirement

2.000 GPA required in the minor

American Sign Language, Minor

The American Sign Language (ASL) program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

The ASL program offers a wide array of courses as well as volunteer, internship, and practicum opportunities. For students wishing to pursue a minor in ASL, the program is committed to providing opportunities that will allow them to acquire the linguistic, cognitive, and ethical decision-making skills as well as the sociocultural knowledge necessary to work in positive and supportive ways with Deaf people.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4
DEAF 1500	Deaf People in Society	4

Required Language Courses

Code	Title	Hours
Students with prior skills in American Sign Language are allowed to waive up to four AMSL courses:		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4

Elective

Code	Title	Hours
Complete one of the following:		
AMSL 3101	Advanced ASL 1	4
AMSL 3102	Advanced ASL 2	
AMSL 4992	Directed Study	
DEAF 2500	Deaf History and Culture	
DEAF 2700	ASL Linguistics	

GPA Requirement

2.000 GPA required in the minor

Arabic, Minor

We live in a truly global world, where the leaders of tomorrow will dwell in, and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Arabic, the fifth largest language in the world in terms of speakers, will help you become a truly

global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Languages Center.

Code	Title	Hours
ARAB 2101 or ARAB 2301	Intermediate Arabic 1 Intermediate Arabic Immersion 1	4
ARAB 2102 or ARAB 2302	Intermediate Arabic 2 Intermediate Arabic Immersion 2	4

Electives

Code	Title	Hours
ARAB 3301	Advanced Arabic Immersion 1	4
ARAB 3302	Advanced Arabic Immersion 2	
ARAB 3800	Special Topics in Arabic	4
ARAB 4800	Special Topics in Arabic	
ARAB 4992	Directed Study	4
CLTR 1502	Introduction to Arabic Culture	
CLTR 4944	Cultural Engagement Abroad	4
HIST 1185	Introduction to Middle Eastern History	
HIST 1290	Modern Middle East	4
INTL 1160	Middle East Studies	
INTL 2400	Politics of Islam and Gender	4
LITR 1150	Muslim Writers and the Qur'an (in English Translations)	
POLS 4915	Model Arab League	4

GPA Requirement

2.000 GPA required in the minor

Chinese, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Chinese will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and

writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
CHNS 2101 or CHNS 2301	Intermediate Chinese 1	4
CHNS 2102 or CHNS 2302	Intermediate Chinese 2	4

Electives

Code	Title	Hours
CHNS 3101 or CHNS 3301	Advanced Chinese 1	
CHNS 3102 or CHNS 3302	Advanced Chinese 2	
CHNS 3800	Special Topics in Chinese	
CHNS 4800	Special Topics in Chinese	
CHNS 4992	Directed Study	
CLTR 1500	Modern Chinese History and Culture	
CLTR 4944	Cultural Engagement Abroad	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2360	History of Capitalism in East Asia	

GPA Requirement

2.000 GPA required in the minor

Film and International Cultures, Minor

The minor in Film and International Cultures allows students to study in a sustained and in-depth manner the rapidly expanding global visual culture. Students will explore the history, theory, aesthetics and criticism of film and other moving-image media on a global scale and in relation to culture, other arts, politics and propaganda. In this sense, our minor is a most valuable asset in a multi-disciplinary portfolio for anyone interested in how the image and the film/propaganda industry shape the world we live in and the ways in which we conceive of ourselves and others.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: At least two of the courses taken for the minor must be at or above the 2000 level.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4
CLTR 2001	World Cultures through Film	4

Film and Culture Study

Code	Title	Hours
Select one of the following pairings:		8
CLTR 1240 and CLTR 1505	Latin American Film and Introduction to Latin American Culture	
CLTR 1260 and CLTR 1700	Japanese Film and Introduction to Japanese Pop Culture	
CLTR 1265 and CLTR 1504	and Introduction to Spanish Culture	
CLTR 1280 and CLTR 1501	French Film and Culture and Introduction to French Culture	
CLTR 1508 and CLTR 1509	and	
CLTR 2501 and CLTR 1500	and Modern Chinese History and Culture	
CLTR 3450 and CLTR 1502	Israeli and Palestinian Film and Introduction to Arabic Culture	

Elective

Note: Courses taken for this requirement cannot be double-counted with courses taken to fulfill the film and culture study requirement.

Code	Title	Hours
Complete one of the following:		4
CLTR 1240	Latin American Film	
CLTR 1260	Japanese Film	
CLTR 1265		
CLTR 1280	French Film and Culture	
CLTR 1508		
CLTR 2504		
CLTR 2510		
CLTR 2501		
CLTR 3930		
CLTR 3450	Israeli and Palestinian Film	
CLTR 3500	French Culture and the Arts	
CLTR 4508		

GPA Requirement

2.000 GPA required in the minor

Italian, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Italian will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
ITLN 2101 or ITLN 2301	Intermediate Italian 1 Intermediate Italian Immersion 1	4
ITLN 2102 or ITLN 2302	Intermediate Italian 2 Intermediate Italian Immersion 2	4

Electives

Code	Title	Hours
CLTR 1503	Introduction to Italian Culture	
CLTR 4944	Cultural Engagement Abroad	
ITLN 3101 or ITLN 3301	Advanced Italian 1 Advanced Italian Immersion 1	
ITLN 4992	Directed Study	
LITR 1250	Dante's Inferno and Medieval Italian Culture	

GPA Requirement

2.000 GPA required in the minor

Japanese, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Japanese will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating

cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad.

Required Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
JPNS 2101 or JPNS 2301	Intermediate Japanese 1 Intermediate Japanese Immersion 1	4
JPNS 2102 or JPNS 2302	Intermediate Japanese 2 Intermediate Japanese Immersion 2	4

Electives

Code	Title	Hours
CLTR 1260	Japanese Film	
CLTR 1700	Introduction to Japanese Pop Culture	
CLTR 4944	Cultural Engagement Abroad	
HIST 1252	Japanese Literature and Culture	
HIST 2351	Modern Japan	
JPNS 3101 or JPNS 3301	Advanced Japanese 1 Advanced Japanese Immersion 1	
JPNS 3102 or JPNS 3302	Advanced Japanese 2 Advanced Japanese Immersion 2	
JPNS 4992	Directed Study	

GPA Requirement

2.000 GPA required in the minor

French, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing French will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Course

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
FRNH 2101 or FRNH 2301	Intermediate French 1	4
FRNH 2102 or FRNH 2302	Intermediate French 2	4

Electives

Code	Title	Hours
CLTR 1501	Introduction to French Culture	
CLTR 3500	French Culture and the Arts	
FRNH 3102 or FRNH 3302	Advanced French 2	

GPA Requirement

2.000 GPA required in the minor

Portuguese, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Portuguese will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
PORT 2101	Intermediate Portuguese 1	4
PORT 2102	Intermediate Portuguese 2	4

Electives

Code	Title	Hours
ANTH 4500 or INTL 4500	Latin American Society and Development	
CLTR 1240	Latin American Film	
CLTR 2715	New Media Narratives in Latin America: Local and Global Dimensions	
CLTR 4944	Cultural Engagement Abroad	
HIST 1187	Introduction to Latin American History	
PORT 3900	Specialized Instruction in Portuguese	
PORT 4992	Directed Study	

GPA Requirement

2.000 GPA required in the minor

Russian, Minor

We live in a truly global world where the leaders of tomorrow will dwell in and negotiate all transactions in spaces not claimed in exclusivity by a single people, language or culture. Knowing Russian will help you become a truly global citizen. Our minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Courses

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Courses

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
RSSN 2101 or RSSN 2301	Intermediate Russian 1	4

RSSN 2102	Intermediate Russian 2	4
or RSSN 2302	Intermediate Russian Immersion 2	

Electives

Code	Title	Hours
CLTR 4944	Cultural Engagement Abroad	
HIST 1285	Introduction to Russian Civilization	
HIST 1286	History of the Soviet Union	
RSSN 4992	Directed Study	
RSSN 4993	Independent Study	
SOCL 1215	Society and Culture in Russia	

GPA Requirement

2.000 GPA required in the minor

Spanish, Minor

Spanish is the second most spoken language in the world. It is used in more than twenty countries, including the United States. In fact, in terms of the number of speakers, the United States is the second largest Spanish-speaking country in the planet. Being a Spanish speaker is a major professional and cultural asset as it prepares you to be successful in any career path. Yet, in our society, knowing Spanish is not just an asset; it is increasingly a necessity. Not only does proficiency in Spanish prepare you to be a leader in a country where Hispanics are the fastest growing segment of the population and where Spanish-speakers are the vast majority of the population in the hemisphere. Knowing Spanish also makes you a truly global citizen. Our Spanish minor certifies that you have attained intermediate to advanced levels of listening, speaking, reading and writing proficiency in the language. It also opens before you a fascinating cultural and intellectual world in and beyond the classroom with a myriad of opportunities to travel, live and work abroad.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Students will be required to take a total of five classes. These classes may include courses and language classes at or above the intermediate level in Dialogues of Civilization at NU. A maximum of two courses of transfer credits, including transferable courses taken abroad, may count towards the five classes in the minor.

Required Culture Course

Code	Title	Hours
CLTR 1120	Introduction to Languages, Literature, and Culture	4

Required Language Requirement

Students may waive any of these courses by taking the language exam in the World Language Center.

Code	Title	Hours
SPNS 2101	Intermediate Spanish 1	4
or SPNS 2301	Intermediate Spanish Immersion 1	
SPNS 2102	Intermediate Spanish 2	4
or SPNS 2302	Intermediate Spanish Immersion 2	

Electives

Code	Title	Hours
ANTH 4500	Latin American Society and Development	
or INTL 4500	Latin American Society and Development	
CLTR 1240	Latin American Film	
CLTR 1504	Introduction to Spanish Culture	
CLTR 1505	Introduction to Latin American Culture	
CLTR 2715	New Media Narratives in Latin America: Local and Global Dimensions	
CLTR 3715	New Narratives: Latin America after 1989	
CLTR 3725	Representing Violence and Human Rights in Latin America	
CLTR 4944	Cultural Engagement Abroad	
HIST 1187	Introduction to Latin American History	
LACS 1220	Latino, Latin American, and Caribbean Studies	
LANG 4800	Special Topics in Language	
LITR 4560	Masterpieces of Spanish Literature: 18th–20th Century	
LITR 4561	Masterpieces of Spanish Literature: 12th–17th Century	
LITR 4655	Latin American Literature	
SPNS 3101	Advanced Spanish 1	
or SPNS 3301	Advanced Spanish Immersion 1	
SPNS 3102	Advanced Spanish 2	
or SPNS 3302	Advanced Spanish Immersion 2	
SPNS 3501	Advanced Spanish Conversation: Global Communication	

GPA Requirement

2.000 GPA required in the minor

Economics

Website (<http://www.northeastern.edu/cssh/economics>)

William T. Dickens, PhD

University Distinguished Professor and Interim Chair

301 Lake Hall
617.373.2882
617.373.3640 (fax)
econ@northeastern.edu

Economics is the study of how societies produce and exchange goods and services to satisfy needs. Undergraduates may study economics to develop specialized analytical skills useful in today's complex labor market. Economics is distinguished among the social sciences by having a systematic normative as well as a positive framework for evaluating public policy. The major in economics is also a good foundation for graduate studies in advanced economics, public policy, law, or business.

Macroeconomics, which focuses on the overall economy, deals with such problems as inflation, unemployment, growth and instability, economic development, and governmental monetary and fiscal policies.

Microeconomics examines the economic behavior of individuals, households, firms, industries, and trade among countries. It seeks to

assess the economic effects of market power and environmental damage and analyzes the economic aspects of natural resources, poverty, health, income distribution, trade unions, crime, and government regulation.

Courses in economics cover international trade; the behavior of families, firms, and industries in the market economy; the environmental costs of growth; and the economic aspects of natural resources, poverty, health, labor market discrimination, trade unions, crime, and governmental oversight. International and comparative perspectives are emphasized, most directly in courses in studies of the developing world and economic history.

Students may pursue a BA, a BS, or a minor in economics. Additionally, economics majors in their junior year may qualify for admission to the PlusOne program that combines the BA or BS with a master's degree in economics (requires an additional 16 semester hours of course work). The department also offers combined majors with business administration, environmental studies, international affairs, mathematics, philosophy, computer science, and political science.

Graduates may find jobs in major corporations; financial institutions; nonprofits; NGOs; or federal, state, and local governments. Their work may involve planning and forecasting, assessing labor needs, and undertaking financial studies. They may estimate consumer demand for new products, conduct research, teach, or provide specialized consulting services.

Academic Progression Standards

The following are the requirements to progress in the major:

Code	Title	Hours
The following three core courses should be completed first:		12
ECON 1115	Principles of Macroeconomics	
ECON 1116	Principles of Microeconomics	
MATH 1231	Calculus for Business and Economics	
The following four core courses should be completed by the end of sophomore year (ECON 2560 required for BS majors only):		16
ECON 2315	Macroeconomic Theory	
ECON 2316	Microeconomic Theory	
ECON 2350	Statistics	
ECON 2560	Applied Econometrics	
Within two semesters of completing the above courses, BA majors should complete:		4
ECON 3520	History of Economic Thought	

For BA/BS majors, grades earned in the following five core courses must average to a 2.000 grade-point average (GPA) or better.

Code	Title	Hours
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4

After admission to the major, all required economics courses must be taken in the day college.

PlusOne Program (MA) in Economics

The PlusOne program in economics offers an opportunity for the best of Northeastern's undergraduate economics majors to complete both

the undergraduate degree program (BS or BA) and the professional program (MA) in economics in less time than if the programs were completed sequentially. Students apply no later than junior year, after all core economics classes have been completed, and begin taking master's course work in their senior year. One additional year of graduate study is required to complete the master's program. Students interested in this option should consult with the departmental undergraduate and graduate directors.

Programs

Bachelor of Arts (BA)

- Economics (p. 672)
- International Affairs and Economics (p. 676)
- Political Science and Economics (p. 680)

Bachelor of Science (BS)

- Economics (p. 674)
- Computer Science and Economics (p. 312)
- Cybersecurity and Economics (p. 352)
- Economics and Business Administration (p. 243)
- Economics and Mathematics (p. 563)
- Economics and Philosophy (p. 692)
- Environmental Studies and Economics (p. 549)
- Political Science and Economics (p. 686)
- Politics, Philosophy, and Economics (p. 623)

Minor

- Economics (p. 694)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Economics, BA

The **Bachelor of Arts** degree in economics maintains the tradition of the liberal arts with the language and arts courses required to satisfy the university's BA degree requirements. Along with the six core courses in economics, students may choose from over 40 electives. Many of these electives continue this liberal arts tradition with courses that focus on economic literature, economic history, the history of economic thought, and political economy. Students considering future doctoral studies in economics are strongly encouraged to pursue a double major in economics (BS) and mathematics (BS) or choose our combined economics/mathematics major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Major Requirements for BA

Code	Title	Hours
Required Economics Courses		
Grades in the required economics courses must average a minimum of 2.000 with no course below a C-.		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
Senior Seminar		
ECON 4692	Senior Economics Seminar	4

Economics Electives for BA

Complete five of the following with no more than one at the introductory level: 20

Code	Title	Hours
Introductory		
ECON 1200 to ECON 1990		
Intermediate		
ECON 2990 to ECON 3499		
ECON 3915	Intermediate Selected Topics in Macroeconomics	
ECON 3916	Intermediate Selected Topics in Microeconomics	
Advanced		
ECON 3990	Elective	
ECON 4600 to ECON 4681		
ECON 4915	Advanced Selected Topics in Macroeconomics	
ECON 4916	Advanced Selected Topics in Microeconomics	
ECON 4970 to ECON 4990		
ECON 4991	Research	
ECON 4992	Directed Study	
ECON 4994	Internship	
ECON 4996	Experiential Education Directed Study	
ECON 5200 to ECON 5299		

Breadth Courses for Economics Major

Code	Title	Hours
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4

Experiential Learning Requirement for Economics

Note: ECON 4992 or ECON 4996 can double-count for an economics elective in the major.

Code	Title	Hours
Complete one of the following courses, or complete study abroad or co-op: 4		
ECON 4992	Directed Study	
ECON 4996	Experiential Education Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ECON 4971	Junior/Senior Honors Project 2	

Economics Major Credit Requirement

Complete 56 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1000	1	ECON 1116	4	Vacation	0	Vacation	0
ECON 1115	4	Foreign language core course	4				
ENGW 1111	4	Elective	4				
MATH 1231	4	CS 1100	4				
Foreign language core course	4						
		17		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 3520	4	ECON 2316	4	Vacation	0	Co-op	0
ECON 2350	4	ECON undergraduate elective	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
		EESH 2000		1			
		16		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3308	4	ECON undergraduate elective	4	Co-op	0
		ECON 2315		4		Elective	
		ECON undergraduate elective		4			
		Elective		4			
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON undergraduate elective	4	ECON undergraduate elective	4	Co-op	0
		Elective	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	ECON 4692	4
		Elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115	4	ECON 1116	4	Vacation	0	Vacation	0
ENGW 1111	4	CS 1100	4				
MATH 1231	4	Elective	4				
ECON 1000	1	Foreign language core course	4				
Foreign language core course	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2315	4	Co-op	0	Co-op	0	ECON undergraduate elective	4
ECON 3520	4					Elective	4
Foreign language core course	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3308	4	Co-op	0	Co-op	0	ECON undergraduate elective	4
ECON 2316	4					Elective	4
ECON 2350	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON undergraduate elective	4	Co-op	0	Co-op	0	Vacation	0
ECON undergraduate elective	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ECON undergraduate elective	4	ECON 4692	4
Elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Economics, BS

The **Bachelor of Science** degree focuses attention on the use of mathematics in economic models in the six core courses and many of the required seven electives. The BS degree allows ample room to take courses such as econometrics, game theory, and mathematical economics in addition to more supporting courses in the mathematics and computer science departments. Students considering future doctoral studies in economics are strongly encouraged to pursue a double major in economics (BS) and mathematics (BS) or to choose our combined economics/mathematics major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Major Requirements for BS

Code	Title	Hours
Required Economics Courses		

Grades in the required economics courses must average a minimum of 2.000:

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
Senior Seminar		
ECON 4692	Senior Economics Seminar	4

Electives for BS in Economics

Code Title Hours
 Complete seven of the following with no more than two at the introductory level: 28

Introductory

ECON 1200 to ECON 1990

Intermediate

ECON 2990 to ECON 3499

ECON 3915 Intermediate Selected Topics in Macroeconomics

ECON 3916 Intermediate Selected Topics in Microeconomics

Advanced

ECON 3520 History of Economic Thought

ECON 3990 Elective

ECON 4600 to ECON 4681

ECON 4915 Advanced Selected Topics in Macroeconomics

ECON 4916 Advanced Selected Topics in Microeconomics

ECON 4970 to ECON 4990

ECON 4991 Research

ECON 4992 Directed Study

ECON 4994 Internship

ECON 4996 Experiential Education Directed Study

Breadth Courses for Economics Major

Code Title Hours		
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4

Experiential Learning Requirement for Economics

Note: ECON 4992 or ECON 4996 can double-count for an economics elective in the major.

Code Title Hours		
Complete one of the following courses, or complete study abroad or co-op: 4		
ECON 4992	Directed Study	
ECON 4996	Experiential Education Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ECON 4971	Junior/Senior Honors Project 2	

Economics Major Credit Requirement

Complete 64 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115	4	ECON 1116	4	Vacation	0	Vacation	0
ENGW 1111	4	CS 1100	4				
MATH 1231	4	Elective	4				
Elective	4	Elective	4				
ECON 1000	1						
		17		16		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2315	4	ECON 2316	4	Vacation	0	Co-op	0
ECON 2350	4	ECON 2560	4				
Elective	4	ECON undergraduate elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
		16		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3308	4	ECON undergraduate elective	4	Co-op	0
		ECON undergraduate elective	4	Elective	4		
		ECON undergraduate elective	4				
		Elective	4				
		0		16		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON undergraduate elective	4	ECON undergraduate elective	4	Co-op	0
		Elective	4	Elective	4		
		Elective	4				
		Elective	4				
		0		16		8	

Year 5

Fall	Hours	Spring	Hours				
Co-op	0	ECON 4692	4				
		ECON undergraduate elective	4				
		Elective	4				

Elective	4
0	16

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115	4	ECON 1116	4	Vacation	0	Vacation	0
ENGW 1111	4	CS 1100	4				
MATH 1231	4	Elective	4				
ECON 1000	1	Elective	4				
Elective	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2315	4	Co-op	0	Co-op	0	ECON 2560	4
ECON 2350	4					ECON undergraduate elective	4
Elective	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3308	4	Co-op	0	Co-op	0	ECON undergraduate elective	4
ECON undergraduate elective	4					Elective	4
Elective	4						
ECON 2316	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON undergraduate elective	4	Co-op	0	Co-op	0	Vacation	0
ECON undergraduate elective	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ECON undergraduate elective	4	ECON 4692	4
Elective	4	ECON undergraduate elective	4
Elective	4	Elective	4

Elective	4	Elective	4
16		16	

Total Hours: 130

International Affairs and Economics, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international economic issues since the early 20th century through diverse and cross-disciplinary theories of economic development and growth; states, societies, and markets (the intersection of politics and economics); and the role of states, civil societies, and social movements in crafting or addressing economic strategies, inequalities, and citizenship rights.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
International Affairs/Economics at Northeastern		
INTL 1000 or ECON 1000	International Affairs at Northeastern Economics at Northeastern	1

Required Courses

INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
ANTH 1101 or HIST 2211	Peoples and Cultures The World Since 1945	4

Global Dynamics

Complete three of the following with one course numbered 2000 or above. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements: 12

<i>Environment</i>	
ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society
<i>Law, Diplomacy, and Global Governance</i>	
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
<i>Human Rights and Social Justice</i>	
INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy

ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
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Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:

Africa

AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	

Asia

ANTH 4350 or INTL 4350	Ethnography of Southeast Asia	
ASNS 1150 or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	

Europe

CLTR 1501	Introduction to French Culture	
CLTR 1503	Introduction to Italian Culture	
CLTR 1504	Introduction to Spanish Culture	
ECON 1293	European Economic History	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	

HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2370	Renaissance to Enlightenment	
HIST 2376	Britain and the British Empire	
HIST 4946	Independent Field Research Abroad: Central Europe	
POLS 3435	Politics and Governance of Europe and the European Union	

Latin America

ANTH 4500 or INTL 4500	Latin American Society and Development	
CLTR 1505	Introduction to Latin American Culture	
CLTR 1240	Latin American Film	
HIST 1187	Introduction to Latin American History	
LACS 1220	Latino, Latin American, and Caribbean Studies	
LITR 4655	Latin American Literature	

Middle East

INTL 1150	The Mediterranean World: An Overview	
INTL 1160	Middle East Studies	
INTL 2100	Modern Israel	
INTL 2200	America and the Middle East	
INTL 2400	Politics of Islam and Gender	
INTL 3250	Democracy and Development in North Africa and the Mediterranean	
CLTR 1502	Introduction to Arabic Culture	
ECON 1292	Economic History of the Middle East	
HIST 1185	Introduction to Middle Eastern History	
HIST 1290	Modern Middle East	
POLS 3465	Government and Politics in the Middle East	
POLS 3470	Arab-Israeli Conflict	
POLS 4915	Model Arab League	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 1287	Modern Judaism	

Russia

HIST 1285	Introduction to Russian Civilization	
HIST 1286	History of the Soviet Union	
SOCL 1215	Society and Culture in Russia	

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Economics Requirements

Code	Title	Hours
Required Economics Courses		
Grades in the following courses must average a minimum of 2.000 with no grade lower than C-.		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4

ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 3520	History of Economic Thought	4

Economics Electives

Code	Title	Hours
	Complete three economics electives with a minimum of one numbered 3000 or above. Courses used to satisfy international affairs requirements may not be used as economics electives.	12

Supporting Courses

Code	Title	Hours
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4

Integrative Requirements

Code	Title	Hours
Development Economics		
ECON 1291	Development Economics	4
Senior Seminar		
Complete one of the following with a thesis or project that integrates both international affairs and economics:		
ECON 4692	Senior Economics Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

International Affairs and Economics Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1231	4	Vacation	0	Vacation	0
INTL 1101	4	ECON 1116	4				
ECON 1115	4	POLS 1160	4				
ENGW 1111	4	POLS 1161	0				
Foreign language core course	4	HIST 2211	4				
17		16		0		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 3520	4	ECON 2350	4	Vacation	0	Co-op	0
CS 1100	4	INTL elective	4				
INTL elective	4	Foreign language core course	4				

Foreign language core course	4	ECON 2316	4				
16		16		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL 3400	4	INTL elective	4	Co-op	0
		ECON 2315	4	INTL elective	4		
		Elective	4				
		Elective	4				
0		16		8		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON undergraduate elective	4	Elective	4	Co-op	0
		ECON undergraduate elective	4	Elective	4		
		INTL elective	4				
		Elective	4				
0		16		8		0	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON undergraduate elective	4				
		INTL 4700	4				
		Elective	4				
		Elective	4				
0		16		8		0	

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1231	4	Vacation	0	Vacation	0
INTL 1101	4	ECON 1116	4				
ECON 1115	4	POLS 1160	4				
ENGW 1111	4	POLS 1161	0				
Foreign language core course	4	HIST 2211	4				
17		16		0		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 3520	4	Co-op	0	Co-op	0	INTL elective	4
CS 1100	4					INTL elective	4
INTL elective	4						
Foreign language core course	4						
16		0		0		8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2350	4	Co-op	0	Co-op	0	Elective	4
INTL elective	4					Elective	4
Foreign language core course	4						
ECON 2316	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
ECON 2315	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ECON undergraduate elective	4	ECON undergraduate elective	4
ECON undergraduate elective	4	INTL 4700	4
INTL elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

Political Science and Economics, BA

The combined major in political science and economics offers students the opportunity to integrate the study of politics and government with the study of economics. Students complete the core courses in political science along with core courses in economics that cover both macroeconomic and microeconomic perspectives. This combined major highlights the important role that the economy plays in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4

Political Theory

Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Restricted Electives

Complete two of the following:		8
POLS 3307	Public Policy and Administration	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2360	Politics of Poverty	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	

Political Science Electives

Complete two courses in the following range, or complete a concentration as outlined below:		8
POLS 3300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 681).

- American Political Institutions (p. 681)
- Campaigns and Elections (p. 681)
- International Relations and Diplomacy (p. 681)
- Public Policy (p. 681)

Economics Requirements for BA

Code	Title	Hours
Breadth Courses		
MATH 1231	Calculus for Business and Economics	4
CS 1100	Computer Science and Its Applications	4

Required Economics Courses

Grades in the required economics courses and in Quantitative Techniques (POLS 2400) or Statistics (ECON 2350) must average a minimum of 2.000:		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4

ECON 3520	History of Economic Thought	4
Economics Electives		
Complete three economics electives with no more than one below 2990.		12

Supporting Courses

Complete either of the statistics and departmental elective combinations listed below:

COMBINATION A

Code	Title	Hours
Statistics		
POLS 2400	Quantitative Techniques	4
Economics		
Complete one of the following:		4
ECON 3404	International Food Economics and Policy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4634	Comparative Economics	
ECON 4635	International Economics	

COMBINATION B

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Political Science		
Complete one course in the following range:		4
POLS 2401 to POLS 5999		

Integrative Requirements

Code	Title	Hours
Senior Seminar/Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	

POLS 2395	Environmental Politics and Policy
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POLS 3425	U.S. Foreign Policy
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Plan of Study

Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	MATH 1231	4	Vacation	0	Vacation	0
POLS 1155	4	POLS 1150	4				
POLS 1156	0	POLS 1151	0				
ECON 1115	4	CS 1100	4				
Elective	4	ECON 1116	4				
		16	16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160	4	POLS 2400	4	Vacation	0	Vacation	0
POLS 1161	0	ECON 2315	4				
ECON undergraduate elective	4	POLS undergraduate elective	4				
POLS undergraduate elective	4	Elective	4				
Elective	4						
		16	16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Elective	4	Vacation	0	Vacation	0
ECON 2316	4	POLS intermediate/advanced undergraduate elective	4				
Political Theory course	4	Elective	4				
ECON undergraduate elective	4	Elective	4				
		16	16		0		0

Year 4

Fall	Hours	Spring	Hours
ECON 2560	4	POLS 4701	4
POLS intermediate/advanced undergraduate elective	4	ECON intermediate/advanced undergraduate elective	4
Elective	4	Elective	4
Elective	4	Elective	4
		16	16

Total Hours: 128

Computer Science and Economics, BS

The combined major in computer science and economics integrates fundamental economics courses with a strong programming foundation. Studying both the behavior of individuals and the collective behavior of industries and governments, students will utilize computing skills to address complex issues within the field.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200 or ECON 1000	Leadership Skill Development Economics at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 12

CS 2500 or higher, except CS 5010
IS 2000 or higher, except IS 4900
DS 2000 or higher, except DS 4900

Economics Requirements

Code	Title	Hours
Required Economics Courses		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4

Economics Electives

Complete four economics electives with no more than two below 3000: 16

ECON 1230	Healthcare and Medical Economics	
ECON 1240	Economics of Crime	
ECON 1290	History of the Global Economy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3424	Law and Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 4635	International Economics	
ECON 4681	Information Economics and Game Theory	

Economics Capstone

ECON 4692	Senior Economics Seminar	4
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Integrative Course Requirement

Code	Title	Hours
The following courses are used in other areas of the major:		
IS 2000	Principles of Information Science	4
ECON 2560	Applied Econometrics	4

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1231 or MATH 1341	Calculus for Business and Economics Calculus 1 for Science and Engineering	4
Computing and Social Issues		
Complete one of the following: 4		
SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science English Requirement

Code	Title	Hours
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College Writing

ENGW 1111 or ENGW 1102	First-Year Writing First-Year Writing for Multilingual Writers	4
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Advanced Writing in the Disciplines

Complete one course from the following:

ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete six general electives.		24

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Exploring Creative Expression and Innovation
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Year, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 1800 and CS 1802	5	IS 2000	4	CS 3500	4		
CS 2500 and CS 2501	5	ECON 1116	4				
ECON 1115	4	MATH 1231 or 1341	4				
ENGW 1111	4						
		19		17		8	
						0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 2800 and CS 2801	5	CS 1210	1	ENGW 3302, 3308, 3311, or 3315	4	Co-op	

CS 3000	4	CS elective 1	4	Elective	4
ECON 2315	4	ECON 2316	4		
ECON 2350	4	ECON elective 1	4		
		Elective	4		
	17		17		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		ECON elective 2	4	Elective	4		
		Computing and social issues requirement	4				
		ECON 2560	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op		CS elective 3	4		
		ECON 4692	4	Elective	4
		ECON elective 3	4	Elective	4
		ECON elective 4	4		
	0		16		8

Total Hours: 135

Five Year, Three Co-ops in Summer 2/Fall**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	IS 2000	4				
CS 2500 and CS 2501	5	ECON 1116	4				
ECON 1115	4	MATH 1231 or 1341	4				
ENGW 1111	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	Vacation		Co-op	
CS 3500	4	CS 2800 and CS 2801	5				
ECON 2315	4	CS 3200	4				
ECON 2350	4	ECON 2316	4				
		ECON elective 1	4				
	16		18		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 1	4	ENGW 3302, 3308, 3311, or 3315	4	Co-op	
		ECON elective 2	4	Elective	4		
		Computing and social issues requirement	4				
		ECON 2560	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		ECON elective 3	4	Elective	4		
		ECON elective 4	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		CS elective 3	4
		ECON 4692	4
		Elective	4
		Elective	4
	0		16

Total Hours: 135

Cybersecurity and Economics, BS

The cybersecurity and economics combined degree applies a multidisciplinary approach integrating fundamental economics courses with a strong programming foundation. Students will study both the behavior of individuals and the collective behavior of industries and governments, utilizing computing skills to ensure the reliability and security of cyberspace.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cybersecurity Major Requirements

Code	Title	Hours
Computer Science Overview		
CS 1200 or ECON 1000	Leadership Skill Development Economics at Northeastern	1
CS 1210	Professional Development for CCIS Co-op	1
Discrete Structures		
A grade of C– or higher is required:		
CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
Computer Science Fundamentals Courses		
A grade of C– or higher is required in each course:		
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
Computer Science Required Courses		
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3650	Computer Systems	4
CS 3700	Networks and Distributed Systems	4
Cybersecurity Required Courses		
CS 2550	Foundations of Cybersecurity	4
CS 3740	Systems Security	4
CS 4740	Network Security	4
CS 4170 or IA 5240	The Law, Ethics, and Policy of Data and Digital Technologies Cyberlaw: Privacy, Ethics, and Digital Rights	4
Cybersecurity Elective		
Complete one of the following: 4		
CS 2800	Logic and Computation	
CS 4710 or CS 6710	Mobile and Wireless Systems Wireless Network	
CS 5770	Software Vulnerabilities and Security	
CS 4770	Cryptography	
CS 4400	Programming Languages	
CS 4500	Software Development	
CS 4240	Large-Scale Parallel Data Processing	
DS 4300	Large-Scale Information Storage and Retrieval	
DS 4400	Machine Learning and Data Mining 1	
IA 5200	Security Risk Management and Assessment	
IA 5210 and IA 5211	Information System Forensics and Lab for IA 5210	
IS 4300	Human Computer Interaction	
EECE 2160	Embedded Design: Enabling Robotics	
EECE 2322 and EECE 2323	Fundamentals of Digital Design and Computer Organization and Lab for EECE 2322	
EECE 3324	Computer Architecture and Organization	
EECE 4534 and EECE 4535	Microprocessor-Based Design and Lab for EECE 4534	

MATH 3527	Number Theory 1	
MATH 4575	Introduction to Cryptography	
COMM 2551	Free Speech in Cyberspace	
CRIM 2200	Criminology	
CRIM 3030	Global Criminology	
CRIM 4040	Crime Prevention	
CRIM 3400	Corporate Security: Securing the Private Sector	
LPSC 1101	Introduction to Law	
LPSC 2301	Introduction to Law, Policy, and Society	
LPSC 3303	Topics in Law and Public Policy	
PHIL 1145	Technology and Human Values	
POLS 2390	Science, Technology, and Public Policy	
POLS 3307	Public Policy and Administration	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
Computer Science Senior Seminar		
THTR 1170	The Eloquent Presenter	1

Supporting Course

Code	Title	Hours
MATH 1341 or MATH 1231	Calculus 1 for Science and Engineering Calculus for Business and Economics	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
Complete one of the following: 4		
ENGW 1111	First-Year Writing	
ENGW 1102	First-Year Writing for Multilingual Writers	
Advanced Writing in the Disciplines		
Complete one of the following: 4		
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Economics Requirements

Code	Title	Hours
Required Courses		
A cumulative 2.0 GPA is required.		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
Electives		

Complete four ECON electives with at least two numbered at ECON 3000 or above.	16
ECON 1001 to ECON 2999	
ECON 3000 to ECON 5999	

Integrative Requirement

Code	Title	Hours
Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
CS 4930	Cybersecurity Capstone	
CS 4940	Research Projects on National Security	

Integrative Requirement

ECON 2560	Applied Econometrics	4
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Required General Electives

Code	Title	Hours
Complete six general electives.		24

Cybersecurity GPA Requirement

Minimum 2.000 GPA required in all computer and information science courses.

Program Requirement

133 total semester hours required.

Political Science and Economics, BS

The combined major in political science and economics offers students the opportunity to integrate the study of politics and government with the study of economics. Students complete the core courses in political science along with core courses in economics that cover both macroeconomic and microeconomic perspectives. This combined major highlights the important role that the economy plays in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4

POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4

Political Theory

Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Restricted Electives

Complete two of the following:		8
POLS 3307	Public Policy and Administration	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2360	Politics of Poverty	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	

Political Science Electives

Complete two courses from the following range, or complete a concentration as outlined below:		8
POLS 3300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 687).

- American Political Institutions (p. 687)
- Campaigns and Elections (p. 687)
- International Relations and Diplomacy (p. 687)
- Public Policy (p. 687)

Economics Requirements for BS

Code	Title	Hours
Breadth Courses		
MATH 1231	Calculus for Business and Economics	4
CS 1100	Computer Science and Its Applications	4

Required Economics Courses

Grades in the required economics courses and in Quantitative Techniques (POLS 2400) or Statistics (ECON 2350) must average a minimum of 2.000:

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2560	Applied Econometrics	4

Economics Electives

Complete three economics electives with no more than one below 2990.

Supporting Courses

Complete either of the statistics and departmental elective combinations listed below:

COMBINATION A

Code	Title	Hours
Statistics		
POLS 2400	Quantitative Techniques	4
Economics		
Complete one of the following:		4
ECON 3404	International Food Economics and Policy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4634	Comparative Economics	
ECON 4635	International Economics	

COMBINATION B

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Political Science		
Complete one course in the following range:		4
POLS 2401 to POLS 5999		

Integrative Requirements

Code	Title	Hours
Senior Seminar/Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following: 8

POLS 2345	Urban Policies and Politics
POLS 2355	
POLS 3310	Public Opinion, Voting, and Elections
POLS 3162	Local Campaigns and Elections
POLS 3320	Politics and Mass Media
POLS 3402	
POLS 3304	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following: 12

POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 3408	International Security
POLS 3435	Politics and Governance of Europe and the European Union
POLS 3470	Arab-Israeli Conflict

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	MATH 1231	4	Vacation	0	Vacation	0
POLS 1155	4	POLS 1150	4				

POLS 1156	0	POLS 1151	0
ECON 1115	4	CS 1100	4
Elective	4	ECON 1116	4
	16		16
			0
			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160	4	POLS 2400	4	Vacation	0	Vacation	0
POLS 1161	0	ECON 2315	4				
ECON undergraduate elective	4	POLS undergraduate elective	4				
POLS undergraduate elective	4	Elective	4				
Elective	4						
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Elective	4	Vacation	0	Vacation	0
ECON 2316	4	POLS intermediate/advanced undergraduate elective	4				
Political Theory course	4	Elective	4				
ECON undergraduate elective	4	Elective	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
ECON 2560	4	POLS 4701	4
POLS intermediate/advanced undergraduate elective	4	ECON intermediate/advanced undergraduate elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 128

Economics and Business Administration, BS

The combined major with business administration is our most popular combined major, combining the underlying economic theories and models and their business applications. After satisfying the core courses in economics, there are over 40 electives from which to choose to complete this combined major.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Grades in required economics courses must average a minimum GPA of 2.000 with no grade lower than C-.

Code	Title	Hours
Introduction to College		
ECON 1000	Economics at Northeastern	1
or BUSN 1102	Personal Skill Development for Business	
Required Economics Courses		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
or MGSC 2301	Business Statistics	
ECON 2560	Applied Econometrics	4
Economics Electives		
Complete four courses from the following lists with no more than one at the introductory level:		16
<i>Introductory</i>		
ECON 1200 to ECON 1990		
<i>Intermediate/Advanced</i>		
ECON 2990 to ECON 3499		
ECON 3520	History of Economic Thought	
ECON 3915	Intermediate Selected Topics in Macroeconomics	
ECON 3916	Intermediate Selected Topics in Microeconomics	
ECON 3990	Elective	
ECON 4600 to ECON 4681		
ECON 4915 to ECON 4916		
ECON 4965	Undergraduate Teaching Experience 1	
ECON 4970 to ECON 4990		
ECON 4992	Directed Study	

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4

Marketing		
MKTG 2201	Introduction to Marketing	4
Organizational Behavior		
ORGB 3201	Organizational Behavior	4
International Business/Social Responsibility		
INTB 1203	International Business and Global Social Responsibility	4

Business Concentration

Complete one of the following business concentrations. Requirements for the concentrations are listed below (p. 244).

- Accounting (p. 244)
- Entrepreneurship and Innovation (p. 244)
- Finance (p. 245)
- Management (p. 245)
- Management Information Systems (p. 245)
- Marketing (p. 246)
- Supply Chain Management (p. 246)

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1231	Calculus for Business and Economics	4
or MATH 1341	Calculus 1 for Science and Engineering	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Co-op Preparation		
BUSN 1103	Professional Development for Business Co-op	1
or EESH 2000	Professional Development for Co-op	
Capstone Requirement		
ECON 4692	Senior Economics Seminar	4
STRT 4501	Strategy in Action	4

Economics GPA Requirement

Minimum 2.000 GPA required in all economics courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN ACCOUNTING

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	

ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
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Note: The following courses do not count toward this concentration:

ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	

Introductory Course

ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	

Capstone Course

Complete one of the following: 4

ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	

Electives

Note: Only one non-ENTR course may be used as an elective.

Complete two of the following: 8

ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	
ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	

ENTR 3403	Managing Operations in a Technology-Based Startup Firm
ENTR 3520	Impact Investing and Social Finance
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances
ENTR 4512	Social Entrepreneurship and Sustainable Development in India
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity
MGMT 3302	Negotiating in Business

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	

MGMT 3330	Developing Leaders for Global Sustainability
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches
MGMT 3350	Managing a Diverse Workforce
MGMT 3360	Law and the Legal Process
MGMT 3420	Managing Human Capital
MGMT 3510	Managing Global Teams Virtually and Locally
MGMT 3530	Project Management
MGMT 4310	The Management Practices of Great Organizations
MGMT 4410	Human Resources and Workforce Analytics
ENTR 2215	Understanding Family Enterprise
ENTR 2414	Social Responsibility of Business in an Age of Inequality
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301 or MKTG 4506	Marketing Management Consumer Behavior	4
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	

MKTG 4420	Sales Management
MKTG 4502	Marketing in the Service Sector
MKTG 4504	Advertising and Brand Promotion
MKTG 4506	Consumer Behavior (if not selected as a required course)
MKTG 4508	Digital Marketing
MKTG 4510	New Product Development
MKTG 4512	International Marketing

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Economics and Mathematics, BS

Given the mathematical and graphical models used extensively in economics, economics and mathematics are natural partners. Our combined major with mathematics is designed for students who want to further develop their mathematics skills to enhance their understanding and interest in economics. This combined major is strongly recommended for students with an interest in pursuing graduate studies in economics.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Code	Title	Hours
Introduction to College		
ECON 1000	Economics at Northeastern	1

or MATH 1000	Mathematics at Northeastern
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Required Economics		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2560	Applied Econometrics	4

Economics Electives		
Complete four economics electives with not more than two at the introductory level:		16

<i>Introductory</i>		
ECON 1200 to ECON 1990		
<i>Intermediate/Advanced</i>		
ECON 2990 to ECON 3499		
ECON 3915	Intermediate Selected Topics in Macroeconomics	
ECON 3916	Intermediate Selected Topics in Microeconomics	
ECON 3990	Elective	
ECON 4600 to ECON 4681		
ECON 4915 to ECON 4916		
ECON 4965	Undergraduate Teaching Experience 1	
ECON 4970 to ECON 4990		
ECON 4992	Directed Study	
ECON 4994	Internship	

Mathematics Requirements

Code	Title	Hours
Required Mathematics		
MATH 1365	Introduction to Mathematical Reasoning	4
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4
MATH 2331	Linear Algebra	4
MATH 3081	Probability and Statistics	4

Mathematics Electives		
Complete two courses in the following range:		8
MATH 3001 to MATH 4999		
The following courses are recommended:		
MATH 3150	Real Analysis	
MATH 4581	Statistics and Stochastic Processes	

Breadth Course

Code	Title	Hours
Computer Science		
CS 1100	Computer Science and Its Applications	4

Integrative Requirements

Code	Title	Hours
Advanced Writing in the Disciplines		
ENGW 3308	Advanced Writing in the Social Sciences	4

Integrative Course

Complete one of the following:	4
ECON 4692	Senior Economics Seminar
MATH 4025	Applied Mathematics Capstone
MATH 5131	Introduction to Mathematical Methods and Modeling

Combined-Major GPA/Credit Requirement

Code	Title	Hours
A GPA of 2.000 is required in the following six courses with no grade lower than C-		
ECON 1115	Principles of Macroeconomics	
ECON 1116	Principles of Microeconomics	
ECON 2315	Macroeconomic Theory	
ECON 2316	Microeconomic Theory	
ECON 2560	Applied Econometrics	
MATH 3081	Probability and Statistics	

A cumulative GPA of 2.000 is required in all math courses.
A grade of C or higher is required in all math courses numbered MATH 2999 or below; grades below C will not count toward the degree.
Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Economics and Philosophy, BS

Both philosophy and economics are the disciplines of critical thinking—thinking in concrete and abstract terms to help put the world in perspective. The combined economics and philosophy major provides students with training to critically evaluate and assess policies and issues on both economic and ethical grounds, including issues such as globalization, immigration, environmental protections, the minimum wage, a fair and just tax, just working environments, and many more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Code	Title	Hours
Introduction to College		
Complete one of the following:		1

ECON 1000	Economics at Northeastern
PHIL 1000	Philosophy at Northeastern

Required Economics Courses

Grades in the following must average a minimum of 2.000:

ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
ECON 3520	History of Economic Thought	4
MATH 1231	Calculus for Business and Economics	4

Economics Electives

Complete two economics electives with not more than one below the 3000 level. 8

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
PHIL 2330	Modern Philosophy	4

Advanced Philosophy Elective

Complete one of the following:		4
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete three additional electives in philosophy or religion. At least one must be numbered 2000 or above. 12

Integrative Requirements

Code	Title	Hours
Complete two of the following that have not been used in above requirements: 8		
PHIL 3435	Moral Philosophy	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4550	Philosophy of Economics	
PHIL 5001	Global Justice	

PHIL 4992	Directed Study
ECON 4992	Directed Study

Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Environmental Studies and Economics, BS

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, political, and economic aspects of the world's environmental problems and potential solutions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Introduction to College

Code	Title	Hours
ECON 1000 or ENVR 1000	Economics at Northeastern Marine and Environmental Sciences at Northeastern	1

Economics Requirements

Code	Title	Hours
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4
Required Economics Courses		
A minimum GPA of 2.000 is required:		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
ECON 3423	Environmental Economics	4

Economics Electives

No more than one course may be at the introductory level (course number 1000–1999).

Complete two of the following:		7-8
ECON 1290	History of the Global Economy	
ECON 1291	Development Economics	
ECON 3404	International Food Economics and Policy	
ECON 3420	Urban Economic Issues	
ECON 3422	Economics of Transportation	
ECON 3424	Law and Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 4635	International Economics	
PPUA 5260	Ecological Economics	

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
PHIL 1180	Environmental Ethics	4
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
POLS 2395	Environmental Politics and Policy	4
SOCL 1246	Environment and Society	4
Science Component		
ENVR 1101	Environmental Science	4
ENVR 1112 or ENVR 1200	Environmental Geology Dynamic Earth	4
ENVR 1445		4
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5

GPA Requirement

Students are required to earn a GPA of 2.000 in either PHIL 1180 or PHIL 3480 and in ENVR 1101.

Environmental Science Elective

Complete one environmental science elective in consultation with the environmental studies head advisor.

Integrative Requirements

Code	Title	Hours
Advanced Writing in the Disciplines		
ENGW 3308	Advanced Writing in the Social Sciences	4
Integrative Course		
Note: Your integrative course and your capstone course (below) must be from different departments.		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

Capstone

Note: Your integrative course (above) and your capstone course must be from different departments.

ECON 4692 or ENVR 4997 or ENVS 4997	Senior Economics Seminar Senior Thesis Senior Thesis	4
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Experiential Learning Requirement

Code	Title	Hours
Complete one of the following:		4
COOP 3945	Co-op Work Experience	
ECON 4992	Directed Study	
ENVR 4992	Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ENVR 4970	Junior/Senior Honors Project 1	

Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Economics, Minor

The minor in economics is flexible enough to be a complement to a student's major field of study. There are six courses needed to complete the minor: three courses in the areas of macro- and microeconomics and three electives that may be chosen to support many different majors.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Calculus 1

Code	Title	Hours
If calculus is not required by your major, complete one of the following courses:		4
MATH 1231	Calculus for Business and Economics (preferred)	
MATH 1241	Calculus 1	
MATH 1251	Calculus and Differential Equations for Biology 1	
MATH 1242	Calculus 2	
MATH 1340	Intensive Calculus for Engineers	
MATH 1341	Calculus 1 for Science and Engineering	
MATH 1252	Calculus and Differential Equations for Biology 2	

Required Courses

Students in the macroeconomics track should complete Macroeconomic Theory (ECON 2315); students in the microeconomics track should complete Microeconomic Theory (ECON 2316):

Code	Title	Hours
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
or ECON 2316	Microeconomic Theory	

Elective Courses

Code	Title	Hours
Complete three of the following courses with no more than one at the introductory level:		12

Introductory

ECON 1200 to ECON 1990

Intermediate

ECON 2990 to ECON 3499

ECON 2560 Applied Econometrics

ECON 3915 Intermediate Selected Topics in Macroeconomics

ECON 3916 Intermediate Selected Topics in Microeconomics

Advanced

ECON 3520 History of Economic Thought

ECON 3990 Elective

ECON 4600 to ECON 4699

ECON 4915 Advanced Selected Topics in Macroeconomics

ECON 4916 Advanced Selected Topics in Microeconomics

ECON 4970 to ECON 4990

ECON 4992 Directed Study

GPA Requirement

2.000 GPA required in the minor

English

Website (<http://www.northeastern.edu/english>)

Chair

Professor Elizabeth Maddock Dillon, PhD

405 Lake Hall
617.373.4540
617.373.2509 (fax)

Undergraduate Program Director Professor Kathleen K. Kelly, k.kelly@northeastern.edu

Linda P. Collins, Administrative Specialist, li.collins@northeastern.edu

Students in the English major study the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone literatures. They analyze writing practices and related media from the Middle Ages through the present, from the quill pen to code. They practice a variety of theoretical and methodological approaches to the study of language, rhetoric, writing, and literature.

Students of English develop capacities for reading, analysis, and expression that are in great demand in the workplace and in graduate study, including the ability to interpret and evaluate a variety of texts, to evaluate and produce arguments, and to engage diverse audiences. The major and minors are particularly suitable for students preparing for graduate school or careers in any field that demands analytical ability and well-honed writing skills. For profiles of current students and recent alumni, see the English department (<http://www.northeastern.edu/cssh/english>) website.

The English department at Northeastern engages students in the experiential liberal arts across four areas: critical literary studies; digital humanities; writing, rhetoric, and publication; and archival studies and histories of the book. The Department of English offers a major and three minors, as well as many combined majors.

Our minors offer concise engagements with several areas of English studies:

- English—introduces the materials and methods of the field as a whole
- Rhetoric—draws on courses in communication studies as well as English
- Writing—encourages students to develop expertise in creative, professional, and public writing, as well as rhetorical theory

Academic Progression Standards

Same as university-wide standards described under “Academic Status (p. 31).”

Preapproved Template Program in English

The Department of English offers a preapproved template program that may be paired with another preapproved template program to create a combined major.

Students may request admission to such a combined major via the appropriate form, which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see your advisor.

PlusOne Program (MA) in English

English majors at the end of their sophomore year or the beginning of their junior year may qualify for application to the PlusOne program that combines the BA with the master’s degree in English. Students interested in this option should consult with the undergraduate program director in English by the end of the sophomore year.

Programs

Bachelor of Arts (BA)

- English (p. 695)
- English and Communication Studies (p. 127)
- English and Cultural Anthropology (p. 703)
- English and Graphic and Information Design (p. 89)
- English and Philosophy (p. 708)
- English and Theatre (p. 212)
- History and English (p. 712)
- Journalism and English (p. 164)
- Linguistics and English (p. 512)
- Media and Screen Studies and English (p. 134)

Bachelor of Science (BS)

- Architecture and English (p. 55)
- Biology and English (p. 488)
- Computer Science and English (p. 314)

Minor

- English (p. 727)
- Rhetoric (p. 727)
- Writing (p. 728)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

English, BA

Students in the English major study the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone

literatures. They analyze writing practices and related media from the Middle Ages through the present, from the quill pen to code. They practice a variety of theoretical and methodological approaches to the study of language, rhetoric, writing, and literature.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Major Requirements

Code	Title	Hours
Foundation Courses		
ENGL 1000	English at Northeastern	1
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
ENGL 1700	Global Literature to 1500	4
Literary Periods		
<i>Early Literatures</i>		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
or JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
<i>Seventeenth to Eighteenth Centuries</i>		
Complete one of the following:		4
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
<i>Nineteenth Century</i>		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	

ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures

Twentieth to Twenty-First Centuries

Complete one of the following:

ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL 3685	Modern and Contemporary Jewish Literature
or JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure
ENGL 4080	Topics in Film

Comparative Literature

Complete two of the following: 8

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 2850	Writing for Social Media: Theory and Practice

ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Advanced Writing in the Disciplines

Complete one of the following: 4

ENGW 3310	Advanced Writing in Literature
ENGW 3311	Advanced Writing for Prelaw

Writing

Complete two of the following: 8

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 3370	Writing Cultures
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar
or ENGL 4720	Capstone Project

Diversity

Complete one of the following courses, which can also count toward another requirement in the major: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature

ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 3685	Modern and Contemporary Jewish Literature
or JWSS 3685	Modern and Contemporary Jewish Literature

Electives

Complete any two ENGL courses, except for First-Year Writing and Advanced Writing in the Disciplines, that has not already been used to fulfill another requirement. The following courses may also be used as electives:

LING 1150	Introduction to Language and Linguistics	8
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	

Experiential Learning Requirement

Complete one course in experiential learning from the list below or any Dialogues of Civilization experience. (Other study-abroad programs may not be used.) This course can also count toward another requirement in the major.

Code	Title	Hours
Experiential Learning Course Work		
ENGL 2690	Boston in Literature	4
ENGL 2740	Writing and Community Engagement	4
ENGL 3340	Technologies of Text	4
ENGL 3370	Writing Cultures	4
ENGL 3375	Writing Boston	4
ENGL 3381	The Practice and Theory of Teaching Writing	4
ENGL 3382	Publishing in the 21st Century	4
ENGL 4400	Opening the Archive	4

Dialogues of Civilization

Complete one Dialogues of Civilization experience, including but not limited to those offered by the department. (Other study-abroad programs may not be used.)

ENGL 2600	Irish Literary Culture (Abroad)	4
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	4
ENGL 2620	What Is Nature? (Abroad)	4
ENGL 3487	Film and Text (Abroad)	4

English Major Credit Requirement

Complete 56 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGL 1000	1	ENGL 1700	4	Vacation	0	Vacation	0
ENGW 1111	4	ENGL 1410 or 1160	4				
ENGL 1400	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
Elective	4	EESH 2000	1				
		17	17			0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Comparative course elective	4	Comparative course elective	4	Vacation	0	Co-op	0
Literary period and diversity elective	4	Foreign language core course	4				
Elective	4	Literary period course elective	4				
		Writing and experiential education elective	4				
		12	16			0	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Advanced Writing in the Disciplines	4	Writing elective	4	Co-op	0
		Literary period elective	4	Elective	4		
		Elective	4				
		Elective	4				
		0	16			8	0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Literary period elective	4	English elective	4		
		Theories and methods elective	4	Elective	4		
		Elective	4				
		English elective	4				
		0	16			8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Capstone	4
		Elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 126

Computer Science and English, BS

The computer science and English combined major focuses on the increasingly interdisciplinary processes of creating, interpreting, and analyzing texts and programs. Students will combine communication and critical judgment, gaining the creativity and adaptability necessary to utilize technology in literary studies, and apply humanities skills to solve programming problems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4

Computing Focus

Students are required to complete one of the following foci (two courses total): 8

Focus 1: Natural Language Processing

CS 3800	Theory of Computation
CS 4120	Natural Language Processing

Focus 2: Programming Languages

CS 3800	Theory of Computation
CS 4400	Programming Languages

Focus 3: Analytics

DS 4100	Data Collection, Integration, and Analysis
DS 4200	Information Presentation and Visualization

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science/Information Science Elective Course

IS 2000 or CS 4500	Principles of Information Science or Software Development	4
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Computer Science Elective Courses

With advisor approval, a directed study, project study, or appropriate graduate-level course may also be taken as an upper-division elective.

Complete 4 credits of CS, IS, or DS classes that are not already required. Choose courses within the following ranges: 4

CS 2500 or higher, except CS 5010
IS 2000 or higher, except IS 4900
DS 2000 or higher, except DS 4900

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
ENGL 1160 or ENGL 1410	Introduction to Rhetoric or Introduction to Writing Studies	4

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature

ENGL 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity

ENGL/JWSS 3685 Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600 Introduction to Shakespeare

ENGL 1700 Global Literature to 1500

ENGL 2240 17th-Century British Literature

ENGL 2296 Early African-American Literature

ENGL 3618 Milton

ENGL/JWSS 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity

ENGL 4000 Topics in Early Literatures

ENGL 4010 Topics in Shakespeare

ENGL 4020 Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260 Romantic Poetry

ENGL 2330 The American Renaissance

ENGL 2340 American Realism

ENGL 3619 Emerson and Thoreau

ENGL 3720 19th-Century Major Figure

ENGL 4040 Topics in 19th-Century Literatures

ENGL 2301 The Graphic Novel

ENGL 2410 Contemporary American Literature

ENGL 2440 The Modern Bestseller

ENGL 2600 Irish Literary Culture (Abroad)

ENGL 2610 Contemporary Israeli Literature and Art (Abroad)

ENGL/JWSS 3685 Modern and Contemporary Jewish Literature

ENGL 3730 20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140 Grammar: The Architecture of English

ENGL 1160 Introduction to Rhetoric

ENGL 1410 Introduction to Writing Studies

ENGL 2150 Literature and Digital Diversity

ENGL 3325 Rhetoric of Law

ENGL 3340 Technologies of Text

ENGL 3370 Writing Cultures

ENGL 3381 The Practice and Theory of Teaching Writing

ENGL 3700 Narrative Medicine

ENGL 4100 Topics in Literary Criticism

ENGL 4400 Opening the Archive

ENGL 4410 Research in Rhetoric and Writing

LING 1150 Introduction to Language and Linguistics

LING 2350 Linguistic Analysis

LING 3450 Syntax

LING 3452 Semantics

LING 3454 History of English

LING 3456 Language and Gender

LING 3458 Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120 Trouble in Utopia

ENGL 1130 Animals, Objects, Humans

ENGL 1450 Reading and Writing in the Digital Age

ENGL 1500 British Literature to 1800

ENGL 1502 American Literature to 1865

ENGL 1503 American Literature 1865 to Present

ENGL 2150 Literature and Digital Diversity

ENGL 2370 The Modern Short Story

ENGL 2380 The Modern Novel

ENGL 2400 Modern Poetry

ENGL 2420 Contemporary Poetry

ENGL 2430 Contemporary Fiction

ENGL 2450 Postcolonial Literature

ENGL 2451 Postcolonial Women Writers

ENGL 2455 American Women Writers

ENGL 2460 Multiethnic Literatures of the U.S.

ENGL 2470 Asian-American Literature

ENGL 2510 Horror Fiction

ENGL 2520 Science Fiction

ENGL 2600 Irish Literary Culture (Abroad)

ENGL 2620 What Is Nature? (Abroad)

ENGL 2690 Boston in Literature

ENGL 3427 The Literature of Science

ENGL 3487 Film and Text (Abroad)

ENGL 3582 Children's Literature

ENGL 3663 The African-American Novel

ENGL 3676 Representing Gender and Sexuality in Literature

ENGL 4070 Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700 Creative Writing

ENGL 2710 Style and Editing

ENGL 2730 Digital Writing

ENGL 2740 Writing and Community Engagement

ENGL 2760 Writing in Global Contexts

ENGL 2770 Writing to Heal

ENGL 2780 Visual Writing: Writing Visuals

ENGL 2850 Writing for Social Media: Theory and Practice

ENGL 3375 Writing Boston

ENGL 3376 Creative Nonfiction

ENGL 3377 Poetry Workshop

ENGL 3378 Fiction Workshop

ENGL 3380 Topics in Writing

ENGL 3382 Publishing in the 21st Century

ENGL 3384 The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives.	8
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Integrative Course Requirement

This course will not be allowed to double-count in the Theories and Methods section above.

Code	Title	Hours
ENGL 3340	Technologies of Text	4

Supporting Course

Code	Title	Hours
Complete one of the following:		4

SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one course from the following:		
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3309	Advanced Writing in the Humanities	
ENGW 3310	Advanced Writing in Literature	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Exploring Creative Expression and Innovation
- Writing in the First Year
- Advanced Writing in the Disciplines
- Writing-Intensive in the Major
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

132 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall**

Year 1									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation			
CS 1800 and CS 1802	5	ENGL 1160 or 1410	4	Elective	4				
CS 2500 and CS 2501	5	Elective	4						
ENGL 1400	4	English literary period 1	4						
ENGW 1111	4								
		19		17		8		0	
Year 2									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
CS 3000	4	Strand elective 1	4	ENGW 3302, 3309, 3310, or 3315	4	Co-op	4		
CS 3200	4	CS 1210	1	Elective	4				
English literary period 2	4	IS 2000 (or English Category or Elective)	4						
English category or elective	4	English category or elective	4						
		ENGL 3340		4					
		16		17		8		0	
Year 3									
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours		
Co-op		Strand elective 2	4	Elective	4	Co-op	4		
		English category or elective	4	Elective	4				
		English category or elective	4						
		Computing and social issues	4						
		THTR 1170	1						
		0		17		8		0	
Year 4									
Fall	Hours	Spring	Hours	Summer 1	Hours				
Co-op		CS 4500 (or English Category or Elective)	4	Elective	4				

ENGL 4710 or 4720	4	Elective	4
CS elective	4		
Elective	4		
0	16		8

Total Hours: 134

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	ENGL 1160 or 1410	4				
CS 2500 and CS 2501	5	Elective	4				
ENGW 1111	4	English literary period 1	4				
ENGL 1400	4						
	19		17		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 3200	4	Vacation		Co-op	
CS 3500	4	CS 1210	1				
English literary period 2	4	IS 2000 (or English Category or Elective)	4				
English category or elective	4	English category or elective	4				
		ENGL 3340	4				
	16		17		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Strand elective 1	4	ENGW 3302, 3309, 3310, or 3315	4	Co-op	
		English category or elective	4	Elective	4		
		English category or elective	4				
		THTR 1170	1				
		Elective	4				
	0		17		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Strand elective 2	4	Elective	4	Co-op	
		Computing and social issues	4	Elective	4		
		Elective	4				

	Elective	4		
	0	16	8	0
Year 5				
Fall	Hours	Spring	Hours	
Co-op		CS 4500 (or English Category or Elective)	4	
		ENGL 4710 or 4720	4	
		CS elective	4	
		Elective	4	
	0	16		

Total Hours: 134

English and Communication Studies, BA

The English department and the communication studies department offer an interdisciplinary combined major in English and communication studies. Broadly speaking, students in the combined major in English and communication studies at Northeastern integrate the study of literature and writing with studies of media, social, corporate, and political communications.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
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English Course-Level Requirement
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College		
ENGL 1000	English at Northeastern	1

Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160 or ENGL 1410	Introduction to Rhetoric Introduction to Writing Studies	4

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies

ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing

ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone		
ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives		
Complete two additional ENGL electives.		8

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	

Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1231	Principles of Organizational Communication	
COMM 1225	Communication Theory	
COMM 1255	Communication in a Digital Age	

Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	

Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3445	Public Relations Principles	
COMM 3501	Free Speech: Law and Practice	
COMM 3530	Communication and Sexualities	

COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives		
Complete three additional COMM courses.		12

Integrative Requirement

Code	Title	Hours
Integrative English Course		
Complete one of the following:		4
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3381	The Practice and Theory of Teaching Writing	

Integrative Communication Studies Course		
COMM 3415	Communication Criticism	4
or COMM 4602	Contemporary Rhetorical Theory	

Communication Studies Grade Requirements

No more than two grades below a C in communication studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

English and Cultural Anthropology, BA

The English department and the sociology/anthropology department offer an interdisciplinary combined major in English and cultural anthropology. Broadly speaking, students in the combined major in English and cultural anthropology at Northeastern integrate the study of literature, language, and writing with the study of human culture and its intersections with structures of inequality (e.g., race, class, and gender) and contemporary global issues.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	

ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	
Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	
ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2510	Horror Fiction	
ENGL 2520	Science Fiction	

ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following:		4
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Cultural Anthropology Requirements

Code	Title	Hours
Foundation Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 3421	Foundations of Anthropological Theory	4

Area Courses

Additional "area courses" taken may count as anthropology electives.

Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Capstone

Students are expected to complete the following course in spring of their senior year:

ANTH 4600	Senior Seminar	4
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Anthropology Electives

Complete three 4-semester-hour courses in addition to the above requirements. One study-abroad course may also count toward this requirement with prior permission from the department. 12

Integrative Requirements

Code	Title	Hours
One integrative course is required for each discipline. Courses taken as electives above may not be used as integrative courses.		

English Integrative Course

Complete one of the following:		4
ENGL 2450	Postcolonial Literature	
ENGL 2470	Asian-American Literature	

Cultural Anthropology Integrative Courses

Complete one of the following:		4
ANTH 2300	Reading Culture through Ethnography	
ANTH 3421	Foundations of Anthropological Theory	

Cultural Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

English and Cultural Anthropology Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

English and Graphic and Information Design, BA

The Department of English and the Department of Art + Design offer an interdisciplinary combined major in English and graphic and information design. Students interested in the combined major in English and graphic and information design integrate the study of literature and writing with the design of message and meaning, integrating text, image, and data.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	

ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	
Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	
ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2510	Horror Fiction	
ENGL 2520	Science Fiction	

ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following:		4
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives.	8
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Graphic and Information Design Requirements

Code	Title	Hours
Art and Design at Northeastern		
ARTF 1000	Art and Design at Northeastern	1
or ENGL 1000	English at Northeastern	
Art and Design Fundamentals		
ARTF 1122	2D Fundamentals: Surface and Drawing (with optional ARTF 1123)	4
ARTF 2220	4D Fundamentals: Sequence and Drawing (with optional ARTF 2221)	4
Art and Design History		
ARTH 2210	Modern Art and Design History	4
ARTH 2215	History of Graphic Design	4
Design		
ARTG 1250	Design Process Context and Systems	4
ARTG 2250	Typography 1 (with optional ARTG 2251)	4
ARTG 2252	Graphic Design 1	4
ARTG 3350	Typography 2	4
ARTG 3451	Information Design 1	4

Degree Project

ARTG 4550	Design Degree Project 1	4
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Art and Design Electives

Complete one of the following:		4
ARTD 2360	Photo Basics (with optional ARTD 2361)	
ARTD 2380	Video Basics (with optional ARTD 2381)	
ARTG 2260	Programming Basics	
ARTF 1120	Observational Drawing	
ARTF 1121	Conceptual Drawing	
ARTF 1124	3D Fundamentals: Structure and Drawing (with optional ARTF 1125)	
ARTF 2223	5D Fundamentals: Experience and Drawing (with optional ARTF 2224)	
ARTG 2400	Interaction Design 1: Responsive (with optional ARTG 2401)	
ARTG 3351	Time-Based Design	
ARTG 3450	Graphic Design 2	
ARTG 3460	Identity and Brand Design	
ARTG 4552	Information Design 2	
ARTG 4553	Environmental Information Design	
ARTG 4554	Typography 3	

Integrative Requirement

Code	Title	Hours
Integrative English Course		
Complete one of the following:		4
ENGL 2301	The Graphic Novel	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 3340	Technologies of Text	
ARTG 4551	Design Degree Project 2	

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Two Co-ops (Summer 2/Fall)

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGL 1000	1	ENGL 1160	4	Vacation		Vacation	
or ARTF 1000		or ENGL 1410					
ENGL 1410	4	ARTG 1410	4				
ENGL 1450	4	ARTG 2250	4				
		(With optional ARTF 2251)					
ARTF 1122	4	Integrat course	4				
(with optional ARTF 2221)							
Elective	4						
		17	16	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARTF 2220 (with optional ARTF 2221)	4	ARTH 2210	4	Vacation	4	Co-op	0
ARTG 2:	4	ARTG 3:	4				
ENGL 1700	4	ENGL 19th-century requirement	4				
ENGL pre-19th century requirer	4	ENGL theories & method requirer	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ARTG 3350	4	Vacation	4	Co-op	0
		ARTH 2:	4				
		ENGL comparative requirement	4				
		ENGL diversity requirer	4				
	0		16		0		0

Year 4

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
Co-op		ARTG 3451	4	Vacation	0
		Elective	4		
		ENGL 20th-century requirement	4		
		ENGL elective	4		
	0		16		0

Year 5

Fall	Hours	Spring	Hours
ARTG 4550	4	Integrative course	4
ENGL 4	4	English writing requirer	4
Elective	4	Elective	4
ENGL elective	4	Elective	4
	16		12

Total Hours: 125

English and Philosophy, BA

The Department of English and the Department of Philosophy and Religion offer an interdisciplinary combined major in English and philosophy. Students in the combined major in English and philosophy integrate the study of literature and writing with the study of ethical and philosophical issues and problems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
	or ENGL 1410	Introduction to Writing Studies
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		
ENGL 2150	Literature and Digital Diversity	4
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	

ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax

LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	
English Electives		
Complete two additional ENGL electives.		8

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
or PHIL 1215		
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Restricted Electives		
Take three of the following with at least one at the 4000 or 5000 level:		12
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Philosophy Electives		
Complete three additional electives from the philosophy department.		12

Integrative Requirement

Code	Title	Hours
PHIL 3435	Moral Philosophy	4
ENGL 3619	Emerson and Thoreau	4
or ENGL 4100	Topics in Literary Criticism	

English and Philosophy Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

English and Theatre, BA

The Department of English and the Department of Theatre offer an interdisciplinary combined major that integrates performance, design, production, and dramatic literature with literary studies, digital humanities, and creative writing. This combined major offers both classroom and experiential learning in making theatre, playwriting, and dramaturgy with the study of the diverse historical, cultural, and aesthetic

contexts of diverse English and American literatures. Students develop the capacity for interpreting a variety of texts through performance and writing to engage diverse audiences.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1000 or ENGL 1000	Theatre at Northeastern English at Northeastern	1
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Intermediate or Advanced Technique		
Complete two of the following:		8
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 3200	Queer Theatre and Performance	
THTR 3300	Devised Theatre Project: Collaborative Performance	
THTR 3400	Designing Combat for the Stage	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirements

Courses used in the integrative requirements cannot double-count in other areas of the major.

Code	Title	Hours
Integrative Courses		
ENGL 1600	Introduction to Shakespeare	4
THTR 2315 or THTR 2320	Rebels of Modern Drama America Onstage: Dramatizing the Dream	4

English and Theatre Major Credit Requirement

90 semester hours required in the major

Program Requirement

128 total semester hours required

History and English, BA

The English department and the history department offer an interdisciplinary combined major in English and history. Students interested in the combined major in English and history integrate the study of literature and writing with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Complete one course from the 1000 level.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Complete one of the following:		4
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete three history courses numbered 2303 or above.		12
Advanced History		
Complete one history course at the 3000 level or above.		4

Capstone		
HIST 4701	Capstone Seminar	4

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	

ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	
ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	

ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
Required Integrative Course		
ENGL 4400	Opening the Archive	4

Experiential Learning Requirement

The History Seminar (HIST 2301) fulfills the university's experiential learning requirement.

Program Requirements

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1000	1	HIST elective or integrative 1	4	Vacation		Vacation	

HIST 1200	1	HIST elective or integrative 2	4				
HIST 1201	4	ENGL 1160 or 1410	4				
ENGW 1111	4	Elective	4				
ENGL 1400	4						
Elective	4						
		18	16	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2301	4	HIST elective or integrative 3	4	Vacation		Co-op	
HIST 2302	1	HIST elective or integrative 4	4				
Pre-19th-century ENGL	4	19th-, 20th-, or 21st-century ENGL	4				
ENGL theory/methods	4	Elective	4				
Elective	4						
		17	16	0	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 5	4	Elective	4	Co-op	
		ENGL comparative	4	Elective	4		
		ENGL writing	4				
		Elective	4				
		0	16	8	0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 6	4	Elective	4	Co-op	
		ENGL diversity	4	Elective	4		
		Elective	4				
		Elective	4				
		0	16	8	0		

Year 5

Fall	Hours	Spring	Hours
Co-op		HIST capstone or HIST senior project or ENGL capstone	4
		HIST elective or integrative 7	4
		Elective	4

Elective	4
0	16

Total Hours: 131

Journalism and English, BA

The School of Journalism and the English Department offer an interdisciplinary combined major in Journalism and English. Broadly speaking, students in the Combined Major in Journalism and English at Northeastern integrate the study of journalism with the study of language, literature and writing.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Creative Expression/Innovation (EI), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

NUpath requirements Interpreting Culture (IC), Analyzing and Using Data (AD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Journalism Major Requirements

Code	Title	Hours
Journalism Introductory Course		
JRNL 1150	Understanding Today's News	4
Journalism Foundations		
Must receive a C or better in the following:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4
Law and Ethics		
JRNL 3550	The First Amendment and the Media	4

or JRNL 4650	Ethics and Issues in Journalism	
Journalism Electives		
Take three JRNL courses		12

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	

ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction

ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
JRNL 3630	Magazine Writing	4
ENGL 2740	Writing and Community Engagement	4
or ENGL 2850	Writing for Social Media: Theory and Practice	

Program Requirement

129 total semester hours required

Plan of Study**Sample Five Years, Three Co-ops****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 1000 or ENGL 1000	1	JRNL 1101 and JRNL 1102	5	Elective	4	Vacation	0
JRNL 1150	4	ENGL 1160 or 1410	4	Elective	4		
ENGW 1111	4	English diversity requirement	4				

ENGL 1400	4	Pre-nineteenth-century literature requirement	4				
Elective	4						
	17		17		8		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2201	4	Co-op	0	Co-op	0	Elective	4
EEAM 2000 or EESH 2000	1					Elective	4
Nineteenth-century, twentieth-, and twenty-first-century literature requirement	4						
Theories and methods requirement	4						
Elective	4						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 2301	4	Co-op	0	Co-op	0	Vacation	0
Journalism elective 1	4						
Comparative literature requirement	4						
English writing requirement	4						
	16		0		0		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 3610	4	Co-op	0	Co-op	0	Vacation	0
Journalism elective 2	4						
English elective 1	4						
ENGL 2740 or 2850	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
JRNL 3550 or 4650	4	Journalism elective 3	4
JRNL 3630	4	ENGL 4710 or 4720	4
English elective 2	4	Elective	4

Elective	4	Elective	4
	16		16

Total Hours: 131

Linguistics and English, BA

In the combined major in linguistics and English, students learn about the structures and analysis of human languages across multiple levels (sounds, words, phrases and sentences, meaning) and apply this knowledge to understanding how the English language works, its rhetorical forms, how it has changed over time, and its cultural context. Students hone their writing skills, develop substantial language-analysis skills, and apply them particularly to English.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Linguistics Requirements

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis	4
LING 3412	Language and Culture	4
LING 3422	Phonology	4
LING 3450	Syntax	4
Linguistics Electives		
Complete three of the following:		12
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3442	Sociolinguistics	
LING 3452	Semantics	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	

LING 4654	Seminar in Linguistics
PSYC 3464	Psychology of Language
PSYC 3466	Cognition
PSYC 4520	Language and the Brain
PSYC 4524	Cognitive Development
PSYC 4610	Laboratory in Psycholinguistics
PSYC 4612	Laboratory in Cognition
PSYC 4658	Seminar in Psycholinguistics
PSYC 4660	Seminar in Cognition
PSYC 4674	Seminar in Cognitive Neuroscience

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below. 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction

ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Linguistics/English Combined-Major Requirements

Code	Title	Hours
Experiential Learning		
Complete one of the following options, or complete a study abroad:		4-8
<i>Junior/Senior Honors Project</i>		
LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2	
<i>Directed Study</i>		
LING 4996		
Integrative Course		
LING 3454	History of English	4

Junior/Senior Seminar

Code	Title	Hours
ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	
or LING 4654	Seminar in Linguistics	

Linguistics and English Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
LING 1150	4	LING 2350	4	Vacation	0	Vacation
ENGL 1111	4	ENGL 1400	4			
MATH 1215	4	Foreign language core course	4			
Elective	4	Elective	4			
		16		16		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
LING 3454	4	LING 3450	4	Vacation	0	Co-op
ENGL 1410 or 1160	4	Linguistics elective	4			
Foreign language core course	4	Theories and methods course	4			
Elective	4	Elective	4			
		16		17		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	LING 3422	4	Elective	4	Co-op
		Pre-19th century literature course	4	Elective	4	
		Comparative literature course	4			
		ENGL 3315	4			
		0		16		8
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	LING 3412	4	Elective	4	Co-op
		Linguistics elective	4	Elective	4	
		Writing course	4			

	19th-, 20th-, and 21st-century literature course	4	
		0	16
		8	0
Year 5			
Fall	Hours	Spring	Hours
Co-op	0	Linguistics elective	4
		Junior/senior seminar	4
		Foreign language core course	4
		Experiential learning research course or elective	4
	0	16	

Total Hours: 129

Media and Screen Studies and English, BA

The media and screen studies program and the Department of English offer a combined major in media and screen studies and English. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone literatures. Majors become familiar with writing practices and media from the Middle Ages through the present, from the quill pen to computer code.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Media and Screen History		
MSCR 4208	TV History	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete three of the following:		12
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
CINE 3500	Film Theory	
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	

English Requirements

Code	Title	Hours
English Course-Level Requirement		

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	

Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	
ENGL 2150	Literature and Digital Diversity	
ENGL 2370	The Modern Short Story	
ENGL 2380	The Modern Novel	
ENGL 2400	Modern Poetry	
ENGL 2420	Contemporary Poetry	
ENGL 2430	Contemporary Fiction	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2510	Horror Fiction	
ENGL 2520	Science Fiction	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2620	What Is Nature? (Abroad)	
ENGL 2690	Boston in Literature	
ENGL 3427	The Literature of Science	
ENGL 3487	Film and Text (Abroad)	
ENGL 3582	Children's Literature	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 4070	Topics in Genre	

Writing

Complete one of the following:	4
ENGL 2700 Creative Writing	
ENGL 2710 Style and Editing	
ENGL 2730 Digital Writing	
ENGL 2740 Writing and Community Engagement	
ENGL 2760 Writing in Global Contexts	
ENGL 2770 Writing to Heal	
ENGL 2780 Visual Writing: Writing Visuals	
ENGL 2850 Writing for Social Media: Theory and Practice	
ENGL 3375 Writing Boston	
ENGL 3376 Creative Nonfiction	
ENGL 3377 Poetry Workshop	
ENGL 3378 Fiction Workshop	
ENGL 3380 Topics in Writing	
ENGL 3382 Publishing in the 21st Century	
ENGL 3384 The Writer's Marketplace	

Capstone

ENGL 4710 Capstone Seminar	4
or ENGL 4720 Capstone Project	

English Electives

Complete two additional ENGL electives.	8
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Integrative Requirement

Code	Title	Hours
Integrative Courses		
CINE 3500	Film Theory	4
ENGL 1450	Reading and Writing in the Digital Age	4
or ENGL 3340	Technologies of Text	

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

128 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Media and screen elective	4	Vacation	4
MSCR 1220	4	Media and screen history elective	4	Elective	4		4
ENGL 1400	4	ENGL pre-19th-century literature elective	4				
ENGL 1160 or 1410	4	ENGL 19th-century literature elective	4				
Elective	4						

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Media and screen elective	4	Co-op	16	Co-op	8	Media and screen elective	4
20th- and 21st-century literature elective	4					Elective	4
ENGL diversity elective	4						
Elective	4						
EEAM 2000	1						
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGL theories and methods elective	4	Advanced MSCR elective	4	Vacation	0	Co-op	0
ENGL elective	4	ENGL comparative elective	4				
Advanced MSCR elective	4	Elective	4				
Elective	4	ENGL 1450 or 3340	4				
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		ENGL writing elective	4	Vacation	0	Vacation	0
		CINE 3500	4				
		Elective	4				
		Elective	4				
Year 5							
Fall	Hours						
MSCR 4623	4						
ENGL 4710 or 4720	4						
ENGL elective	4						
Elective	4						
Total Hours: 130							

Architecture and English, BS**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath attributes Natural and Designed World (ND), Creative Expression and Innovation (EI), Interpreting Culture (IC), Societies and Institutions (SI), and Difference and Diversity (DD) are met through the major course requirements.

In order to graduate, students must complete Formal and Quantitative Reasoning (FQ), Analyzing and Using Data (AD), and Ethical Reasoning (ER) in their electives.

Architecture Requirements

Code	Title	Hours
Required Courses		
ARCH 1110	Fundamental Architectural Representation	4
ARCH 1120	Fundamental Architectural Design	6
ARCH 1310	Architecture and Global Cultures, Prehistory to 1400	4
ARCH 1320	Architecture and Global Cultures, 1400 to Present	4
ARCH 1450	Understanding Design	4
ARCH 2130	Site, Space, and Program	6
ARCH 2240	Architectonic Systems	4
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
Electives		
Complete two of the following courses:		8
ARCH 3370	Topics in Architectural History	
ARCH 3450	Advanced Architectural Communication	
ARCH 5310	Design Tactics and Operations	

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity

ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement

ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
or ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	
ENGL 3375	Writing Boston	4

Program Requirement

128 total semester hours required

Biology and English, BS

In the BS, combined biology and English degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In English courses, students study the diverse historical, cultural, and aesthetic contexts of English, American, and other Anglophone literatures; analyze writing practices and related media; and practice a variety of approaches to the study of language, rhetoric, writing, and literature. The fields of biology and English are bridged with course work in different forms of science writing, as well as psychology and sociology courses exploring the acquisition of language and reading; the sociology of health and illness; and the environment, technology, and society.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000 or ENGL 1000	Biology at Northeastern English at Northeastern	1
Experiential Learning Introduction		
EESC 2000	Professional Development for Co-op	1
Required Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		
BIOL 2301 and BIOL 2302	Genetics and Molecular Biology and Lab for BIOL 2301	5
<i>Project Lab</i>		
BIOL 2309	Biology Project Lab	4
<i>Biochemistry</i>		
BIOL 3611 and BIOL 3612	Biochemistry and Lab for BIOL 3611	5

Biology Elective

Code	Title	Hours
Organismal and Population Biology		
Complete one of the following:		4-5
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Supporting Courses for Biology

Code	Title	Hours
Mathematics		
MATH 1251	Calculus and Differential Equations for Biology 1	4
Statistics		
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	5
Chemistry		
<i>General Chemistry</i>		

CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
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<i>Organic Chemistry</i>		
CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Physics

<i>Physics 1</i>		
Complete one of the following lecture/lab pairs. PHYS 1145/ PHYS 1146 is recommended:		5
PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	
PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	

Physics 2

Complete one of the following lecture/lab pairs. PHYS 1147/ PHYS 1148 is recommended:		5
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	
PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	

Intermediate or Advanced Science

Complete one course from the following:		4
BIOL 2301 to BIOL 5999		
CHEM 2311 to CHEM 5999		
EEMB 2290 to EEMB 5999		
ENVR 2310 to ENVR 5999		
MATH 2280 to MATH 5999		
PHYS 2303 to PHYS 5999		
PSYC 2290 to PSYC 5999		

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160 or ENGL 1410	Introduction to Rhetoric Introduction to Writing Studies	4
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	

ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures

ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals

ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	
Capstone		
ENGL 4710 or ENGL 4720	Capstone Seminar Capstone Project	4
English Electives		
Complete two additional ENGL electives.		8

Integrative Courses

Code	Title	Hours
Integrative English Course		
Complete one of the following:		4
ENGL 2770	Writing to Heal	
ENGL 3340	Technologies of Text	
ENGL 3427	The Literature of Science	
Integrative General Biological Sciences Course		
Complete one of the following:		4
PSYC 3464	Psychology of Language	
PSYC 4520	Language and the Brain	
SOCL 3441	Sociology of Health and Illness	
SOCL 3485	Environment, Technology, and Society	

Capstone Requirement

Complete one of the following capstone options:

Code	Title	Hours
Biology Capstone		
BIOL 4701	Biology Capstone	4
English Capstone		
ENGL 4710 or ENGL 4720	Capstone Seminar Capstone Project	4

Biology and English Combined-Major GPA Requirement

Minimum 2.000 GPA required in all BIOL courses
Minimum 2.000 GPA required in all ENGL courses

Program Requirement

128 total semester hours required

English, Minor

The English minor offers students the opportunity to complement their major area with focused course work in any of the broad areas of English studies, such as writing practices, language, rhetoric, and literature.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Three of the four total courses must be taken at Northeastern.

Note: Courses taken to fulfill the first-year writing requirement and the Advanced Writing in the Disciplines requirements do not count toward this minor. A total of 16 semester hours is required for the English minor.

Requirements

Code	Title	Hours
Introductory Course		
Complete one course in the following range:		4
ENGL 1001 to ENGL 1999		
Electives		
Complete three ENGL courses, two of which must be in the range ENGL 2000 to ENGL 4999.		12
GPA Requirement		
2.000 GPA required in the minor		

Rhetoric, Minor

In the interdisciplinary rhetoric minor, students take courses in both English and communication studies to explore the ways that symbols work to influence thought and action. The minor gives students a foundation in the classical tradition, which developed rhetoric as the art of speaking necessary for participation in democratic societies in a range of forums such as political assemblies, law courts, and public ceremonies. Students also consider contemporary theories and practices that broaden rhetoric's scope to include any form of human discourse that persuades others, creates knowledge, or shapes identity and culture

Minor Requirements

Complete all courses listed below unless otherwise indicated. Three of the four total classes must be taken at Northeastern.

Note: For communication studies students, only two courses from this minor also count toward communication studies major requirements. Additional courses taken for this minor do not count toward communication studies major requirements.

Required Elective

Code	Title	Hours
ENGL 1160 or COMM 1210	Introduction to Rhetoric Persuasion and Rhetoric	4

Electives

Code	Title	Hours
Note: For English majors, only one course from the major may also count toward this elective section of the minor.		
Complete four of the following:		16
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3501	Free Speech: Law and Practice	
COMM 4602	Contemporary Rhetorical Theory	
ENGL 3325	Rhetoric of Law	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 4410	Research in Rhetoric and Writing	

GPA Requirement

2.000 GPA required in the minor

Writing, Minor

Students in the writing minor integrate theory with writing practice. Courses on writing for social media, writing in global contexts, and writing in a variety of creative genres provide students with opportunities to explore writing in diverse contexts.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Three of the four total classes must be taken at Northeastern.

Writing Theories and Methods

Code	Title	Hours
Complete one of the following:		4
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 3325	Rhetoric of Law	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 4410	Research in Rhetoric and Writing	

Writing Electives

Code	Title	Hours
Complete three of the following:		12
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 2301	The Graphic Novel	
ENGL 2700	Creative Writing	
ENGL 2710	Style and Editing	
ENGL 2730	Digital Writing	
ENGL 2740	Writing and Community Engagement	
ENGL 2760	Writing in Global Contexts	
ENGL 2770	Writing to Heal	
ENGL 2780	Visual Writing: Writing Visuals	
ENGL 2850	Writing for Social Media: Theory and Practice	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3375	Writing Boston	
ENGL 3376	Creative Nonfiction	
ENGL 3377	Poetry Workshop	
ENGL 3378	Fiction Workshop	
ENGL 3380	Topics in Writing	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3382	Publishing in the 21st Century	
ENGL 3384	The Writer's Marketplace	
ENGL 4410	Research in Rhetoric and Writing	

GPA Requirement

2.000 GPA required in the minor

History

Website (<http://www.northeastern.edu/history>)

Heather Streets-Salter, PhD
Associate Professor and Chair

249 Meserve Hall
617.373.2660
617.373.2661 (fax)
Kirsten Bilas, Administrative Assistant, k.bilas@northeastern.edu

History at Northeastern emphasizes the study of local and regional histories as well as of the global exchanges between nations, regions, and cultures. Knowledge of the past is also about building the future. In a world marked by increasing exchange between peoples, cultures, and societies, history is key to understanding contemporary issues such as the future of democracy, the nature of citizenship and rights, the origins and conduct of war, the foundations of racial and ethnic conflict and tolerance, and poverty and prosperity. At the same time, history teaches crucial skills in analytical thinking, research processes, writing, oral expression, and multimedia presentation.

History majors take three core seminars on historical research and choose from a broad range of courses in historical themes, periods, and regions. Students focus their studies by establishing a cluster of four courses in a particular geographical area, time period, or theme. The program emphasizes undergraduate research in the major and trains students to conduct research in archives and primary sources and to write research papers. Honors study is strongly encouraged for eligible students, and students are encouraged to take advantage of numerous options for study abroad. Advanced undergraduates have the opportunity to participate in individual directed study with members of the faculty on topics of mutual interest.

Cooperative education placements, fieldwork, internships, and other experiential learning activities are also available. History majors have worked on co-op in law firms, an art auction house, the State Department, the Massachusetts State House, Newton Public Schools, and the Massachusetts State Archives, among many other institutions.

Undergraduates who plan to teach in public schools may combine history with education courses that can lead to state certification in Massachusetts. History students are also encouraged to take Dialogue of Civilizations courses that engage students in short-term study abroad during the summer.

The Department of History offers a broad-based Bachelor of Arts major and two Bachelor of Science options. One BS option emphasizes training in disciplines outside history. It includes the study of research methods and a minor in fields such as English; economics; political science; sociology; cinema studies; East Asian studies; or women's, gender, and sexuality studies. The other BS option seeks to prepare students for public history fields such as museum administration, archival management, or historic preservation. The Department of History participates in numerous interdisciplinary programs, including East Asian studies; cinema studies; environmental studies; international affairs; Jewish studies; Latino/a, Latin American, and Caribbean studies; and women's, gender, and sexuality studies.

The Department of History offers qualified undergraduates the opportunity to pursue a BA/MA or BS/MA degree in five years, with the

approval of the department. Students with a minimum 3.330 cumulative grade-point average (GPA) and minimum 3.500 GPA in required history courses may apply for admission to the PlusOne BA/MA or BS/MA program in history.

Academic Progression Standards

Same as university-wide standards described under “Academic Status (p. 31).”

Preapproved Template Program in History

The Department of History offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<http://www.northeastern.edu/registrar/major-2.html>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see “Student-Requested Combined Major (p. 33).” For template program requirements, visit the myNortheastern web portal (<http://www.myneu.neu.edu>), click on the “Self-Service” tab, then on “My Degree Audit.”

PlusOne Program (MA) in History

History majors at the end of their sophomore year or the beginning of their junior year may qualify for application to the PlusOne program that combines the BA with the master’s degree in history. Students interested in this option should consult with the departmental advisor, Marty Blatt (m.blatt@northeastern.edu), by the end of the sophomore year.

Programs

Bachelor of Arts (BA)

- History (p. 729)
- History and Asian Studies (p. 632)
- History and Cultural Anthropology (p. 734)
- History and English (p. 712)
- History and Philosophy (p. 738)
- History and Political Science (p. 739)
- History and Religious Studies (p. 740)
- Environmental Studies and History (p. 521)
- Media and Screen Studies and History (p. 137)

Bachelor of Science (BS)

- History (p. 744)
- Computer Science and History (p. 322)

Minor

- History (p. 750)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

History, BA

The Bachelor of Arts (BA) is a broadly based liberal arts degree in history. Students who pursue the BA degree must satisfy general requirements and take courses to satisfy Northeastern’s university-wide core curriculum (NuPath), in addition to required and elective history courses. These requirements help students develop their historical

knowledge and skills within the contexts of the arts, humanities, social sciences, and sciences that together comprise the disciplinary sources of historical knowledge. They enable historical understanding to be culturally and linguistically sensitive to the subjects of historical inquiry.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Major Requirements

Code	Title	Hours
Introductory History		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Complete two of the following:		8
HIST 1120	Public History, Public Memory	
HIST 1130	Introduction to the History of the United States	
HIST 1150	East Asian Studies	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1190	Picturing Modernity: The Photographic Image in Culture and Society	
HIST 1228	Americans in the World: Trade, Travel, and Diplomacy	
HIST 1246	World War II in the Pacific	
AFAM 1140	Introduction to African-American History	
WMNS 1103	Introduction to Women’s, Gender, and Sexuality Studies	
History Seminar and Historical Writing		
HIST 2301 and HIST 2302	The History Seminar and Historical Writing	5

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

Additional History Requirements

Code	Title	Hours
Pre-1800 Course		
This course may count toward the history cluster or history elective.		
Complete one of the following:		4
HIST 2390	Africa and the World in Early Times	
HIST 1252	Japanese Literature and Culture	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
HIST 2370	Renaissance to Enlightenment	
HIST 2375	The Tudors, the Stuarts, and the Birth of Modern Britain	
History Outside the United States and Europe		
Complete one of the following:		4
HIST 1150	East Asian Studies	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1290	Modern Middle East	
HIST 1500	Modern Chinese History and Culture	
HIST 2211	The World Since 1945	
HIST 2214	War in the Modern World	
HIST 2311	Colonialism/Imperialism	
HIST 2351	Modern Japan	
HIST 2390	Africa and the World in Early Times	
HIST 4691	Topics in Middle Eastern History	
Capstone or Project		
Complete one of the following:		4
HIST 4701	Capstone Seminar	

Intermediate/Advanced History Course Requirement

A minimum of three courses from the above requirements must be numbered 2303 or higher. These courses may count toward the history cluster.

Experiential Learning Requirement

The History Seminar (HIST 2301) fulfills the university's experiential learning requirement.

History Major Credit Requirement

Complete 46 semester hours in the major.

Program Requirements

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
HIST 1000	1	HIST 1130	4	Vacation	0	Vacation
HIST 1170	4	MATH 1215	4			
ENGW 1111	4	HIST 1110	4			
Elective	4	Elective	4			
HIST 1200	1					
HIST 1201	4					
		18		16		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Foreign language course	4	Foreign language course	4	Vacation	0	Co-op
Elective	4	Pre-1800 or history elective	4			
Pre-1800 or history elective	4	History cluster course	4			
Elective	4	Elective	4			
		16		16		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Foreign language course	4	Elective	4	Co-op
		HIST 2301	4	Upper-division elective	4	
		HIST 2302	1			
		History cluster course	4			
		History elective	4			
		0		17		8
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	History cluster course	4	Elective	4	Co-op
		Elective	4	Elective	4	
		Elective	4			
		Upper-division elective	4			
		0		16		8
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	HIST 4701	4			

Upper-division elective	4
History cluster course	4
Elective	4
0	16

Total Hours: 131

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1170	4	HIST 1130	4	Vacation	0	Vacation	0
ENGW 1111	4	MATH 1215	4				
Elective	4	HIST 1110	4				
HIST 1200	1	Foreign language course	4				
HIST 1201	4						
17	16	0	0	0	0	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language course	4	Co-op	0	Co-op	0	Elective	4
Pre-1800 or history elective	4					Elective	4
History elective	4						
Elective	4						
16	0	0	0	0	0	8	8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language course	4	Co-op	0	Co-op	0	Elective	4
Pre-1800 or history elective	4					Upper-division elective	4
History cluster course	4						
Elective	4						
16	0	0	0	0	0	8	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Vacation	0
HIST 2301	4						
HIST 2302	1						
History elective	4						
History cluster course	4						
17	0	0	0	0	0	0	0

Year 5

Fall	Hours	Spring	Hours
History cluster course	4	HIST 4701	4
Upper-division elective	4	History cluster course	4
Elective	4	Upper-division elective	4
Elective	4	Elective	4
16	16	16	16

Total Hours: 130

Environmental Studies and History, BA

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, and political aspects of the world's environmental problems through historical perspectives and backgrounds.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Science Requirements		
ENVR 1101	Environmental Science	4
ENVR 1202 and ENVR 1203	History of Earth and Life and Interpreting Earth History	5
ENVR 1445		4
Humanities Requirement		
PHIL 1180	Environmental Ethics	4
Social Science Requirements		
ECON 1116	Principles of Microeconomics	4
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4

SOCL 1246	Environment and Society	4
Environmental Studies Electives		
Complete two of the following:		8
ECON 3423	Environmental Economics	
PHIL 3480		
POLS 2395	Environmental Politics and Policy	

History Requirements

Code	Title	Hours
History Requirements		
HIST 1130	Introduction to the History of the United States	4
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	4
HIST 1201	First-Year Seminar	4
HIST 2342		4
History Seminar		
HIST 2301 and HIST 2302	The History Seminar and Historical Writing	5
History/Geographic-Area Electives		
Complete two of the following:		8
ASNS 1150	East Asian Studies	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
History-Area Electives		
Complete four HIST courses, approved by a faculty advisor, focused on an idea or geographic area. These courses must be numbered 2000 or higher.		16

Integrative Courses

Code	Title	Hours
Required Integrative Course		
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
Integrated Elective		
Complete one of the following:		4
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

Experiential Learning and Capstone

Code	Title	Hours
Experiential Learning		
Complete an approved activity from either department, combined with reflection in capstone.		
Capstone Course		
Complete one of the following:		1-4
ENVR 4997 or ENVS 4997	Senior Thesis	
ENVR 4900	Earth and Environmental Science Capstone	
ENVR 4970	Junior/Senior Honors Project 1	
HIST 4701	Capstone Seminar	

Combined-Major Credit Requirement

Complete 91 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGV 1111	4	ENVR 1202 and ENVR 1203	5	Vacation	0	Vacation	0
ENVR 1000	1	HIST 1170	4				
ENVR 1101	4	HIST 1201	4				
HIST 1130 and HIST 1131	4	PHIL 1180	4				
SOCL 1246	4						
		17		17		0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1116	4	EESC 2000	1	Vacation	0	Co-op	0
HIST 2342	4	ENVR 1445	4				
Foreign language course	4	Elective	4				
History elective	4	Foreign language course	4				
History elective	4	HIST geographic elective	4				
		20		17		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 3300 and ENVR 3301	5	Elective	4	Co-op	0
		POLS 1150 and POLS 1151	4	Elective	4		
		Foreign language course	4				
		ENVR undergraduat elective	4				
		0		17		8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGV 3308 or 3315	4	Elective	4	Co-op	0
		HIST 2301 and HIST 2302	5	Elective	4		
		History elective	4				
		History elective	4				
		0		17		8	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Capstone course	1-4
		ENVR undergraduate elective	4
		HIST geographic elective	4
		Integrative major requirement	4
	0		13-16

Total Hours: 134-137

History and Asian Studies, BA

History and Asian studies offers an interdisciplinary combined major. Students interested in the combined major in history and Asian studies integrate the exploration of human history with the rigorous study of Asian cultures, societies, languages, and economies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Choose one course from the 1000 level except HIST 1215, which is required by Asian studies.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Choose one course from the following:		4
HIST 2390	Africa and the World in Early Times	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	

Advanced History

Complete one history course 3000 level or above	4
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History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range. These courses may double-count in the requirements above (except History Colloquium).

Asian Studies Requirements

Code	Title	Hours
Required Courses		
ASNS 1150	East Asian Studies	4
HIST 1215	Origins of Today: Historical Roots of Contemporary Issues	4

Asia in Global Context

Complete one of the following:		4
ECON 1290	History of the Global Economy	
ENGL 2450	Postcolonial Literature	
INTL 2240	Global Population and Development	
POLS 3487	Politics of Developing Nations	

Complete a professional or academic experience abroad in consultation with your advisor.

Language and Elective Requirements

Code	Title	Hours
Language Courses		
Complete the following courses in either Chinese or Japanese:		16
<i>Chinese</i>		
Select one of the following:		
CHNS 1101	Elementary Chinese 1	
CHNS 1301	Elementary Chinese Immersion 1	
Select one of the following:		
CHNS 1102	Elementary Chinese 2	
CHNS 1302	Elementary Chinese Immersion 2	
Select one of the following:		
CHNS 2101	Intermediate Chinese 1	
CHNS 2301	Intermediate Chinese Immersion 1	
Select one of the following:		
CHNS 2102	Intermediate Chinese 2	
CHNS 2302	Intermediate Chinese Immersion 2	
<i>Japanese</i>		
JPNS 1101	Elementary Japanese 1	
JPNS 1102	Elementary Japanese 2	

JPNS 2101	Intermediate Japanese 1
or JPNS 2301	Intermediate Japanese Immersion 1
JPNS 2102	Intermediate Japanese 2
or JPNS 2302	Intermediate Japanese Immersion 2

Asian Studies Electives

Complete three courses from the following focus areas. 12

Society and Politics Focus Area

ANTH 4350	Ethnography of Southeast Asia
ANTH 4515	Culture and Politics in Modern India
ASNS 2245	The Asian-American Experience
INTB 2501	Competing to Win in Emerging Markets
MKTG 4220	Marketing in Asia
PHIL 1130	Ethics: East and West
INTL 2240	Global Population and Development
POLS 3487	Politics of Developing Nations

Language, Literature, and Culture Focus Area

ARCH 1320	Architecture and Global Cultures, 1400 to Present
CLTR 1260	Japanese Film
CLTR 1700	Introduction to Japanese Pop Culture
ENGL 2450	Postcolonial Literature
MUSC 2130	Music of Asia
PHIL 1130	Ethics: East and West

Religious Studies Focus Area

PHIL 1231	Image and Icon in South Asia
PHIL 1273	Jainism
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4393	Asian Religions in the United States
PHIL 4545	Religion and Politics in South Asia

Capstone

Code	Title	Hours
Complete one of the following:		4
HIST 4701	Capstone Seminar	
ASNS 4900	Asian Studies Capstone Directed Study	
ASNS 4920	Asian Studies Capstone Seminar	

Integrative Requirement

Note: Public history concentrators satisfy this requirement within the concentration with Fieldwork in History 1 (HIST 4903) and (HIST 4904).

Code	Title	Hours
HIST 2351	Modern Japan	4
or ASNS 2245	The Asian-American Experience	

History and Asian Studies Major Credit Requirement

Complete 82 semester hours in the major.

Program Requirements

128 total semester hours required

History and Cultural Anthropology, BA

History and cultural anthropology offer an interdisciplinary combined major. Students interested in the combined major in history and cultural anthropology integrate the exploration of human history with the rigorous study of human cultures.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Complete one history course from the 1000 level.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Complete one course from the following:		4
HIST 2390	Africa and the World in Early Times	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete three history courses numbered 2303 or above.		12
Advanced History		
Complete one history course at the 3000 level or above.		4

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

Cultural Anthropology Requirements

Code	Title	Hours
Foundation Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
Area Courses		
Complete two courses from the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives		
Complete three courses in the following range. One study-abroad course may count toward this requirement.		12
ANTH 2001 to ANTH 4599		

Capstone Requirements

Code	Title	Hours
Complete one of the following:		4
ANTH 4600	Senior Seminar	
HIST 4701	Capstone Seminar	

Integrative Requirements

ANTH courses below will double count as area courses.

Code	Title	Hours
ANTH 4350	Ethnography of Southeast Asia	4
ANTH 4510	Anthropology of Africa	4
HIST 2360	History of Capitalism in East Asia	4

Students taking Senior Seminar (ANTH 4600) must complete either a one-semester senior project, which they would do in the context of ANTH 4600, or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1000	1	HIST elective or integrative 1	4	Vacation		Vacation	

HIST 1200	1	HIST elective or integrative 2	4				
HIST 1201	4	ANTH 2305	4				
ENGW 1111	4	Elective	4				
ANTH 1101	4						
Elective	4						
		18	16	0	0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2301	4	HIST elective or integrative 3	4	Vacation		Co-op	
HIST 2302	1	HIST elective or integrative 4	4				
ANTH 3410	4	ANTH 3421	4				
ANTH area course 1	4	Elective	4				
Elective	4						
		17	16	0	0		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 5	4	Elective	4	Co-op	
		ANTH area course 2	4	Elective	4		
		ANTH elective 1	4				
		Elective	4				
		0	16	8	0		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 6	4	Elective	4	Co-op	
		ANTH elective 2	4	Elective	4		
		ANTH elective 3	4				
		Elective	4				
		0	16	8	0		

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST capstone or HIST senior project or ANTH capstone	4				
		HIST elective or integrative 7	4				
		Elective	4				

Elective	4
0	16

Total Hours: 131

History and English, BA

The English department and the history department offer an interdisciplinary combined major in English and history. Students interested in the combined major in English and history integrate the study of literature and writing with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Complete one course from the 1000 level.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Complete one of the following:		4
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete three history courses numbered 2303 or above.		12

Advanced History

Complete one history course at the 3000 level or above. 4

Capstone

HIST 4701 Capstone Seminar 4

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

English Requirements

Code	Title	Hours
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English Course-Level Requirement

In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.

Introduction to College

ENGL 1000	English at Northeastern	1
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Foundational Courses

ENGL 1400	Introduction to Literary Studies	4
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ENGL 1160	Introduction to Rhetoric	4
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or ENGL 1410	Introduction to Writing Studies	
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Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below. 4

ENGL 2150	Literature and Digital Diversity	
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ENGL 2296	Early African-American Literature	
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ENGL 2450	Postcolonial Literature	
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ENGL 2451	Postcolonial Women Writers	
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ENGL 2455	American Women Writers	
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ENGL 2460	Multiethnic Literatures of the U.S.	
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ENGL 2470	Asian-American Literature	
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ENGL 2760	Writing in Global Contexts	
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ENGL 3663	The African-American Novel	
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ENGL 3676	Representing Gender and Sexuality in Literature	
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ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
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ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
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Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare	
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ENGL 1700	Global Literature to 1500	
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ENGL 2240	17th-Century British Literature	
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ENGL 2296	Early African-American Literature	
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ENGL 3618	Milton	
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ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
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ENGL 4000	Topics in Early Literatures	
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ENGL 4010	Topics in Shakespeare	
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ENGL 4020	Topics in 17th- and 18th-Century Literatures	
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Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text
ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers

ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Integrative Requirement

Code	Title	Hours
Required Integrative Course		
ENGL 4400	Opening the Archive	4

Experiential Learning Requirement

The History Seminar (HIST 2301) fulfills the university's experiential learning requirement.

Program Requirements

128 total semester hours required

Plan of Study**Sample Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1000	1	HIST elective or integrative 1	4	Vacation		Vacation	
HIST 1200	1	HIST elective or integrative 2	4				
HIST 1201	4	ENGL 1160 or 1410	4				
ENGW 1111	4	Elective	4				
ENGL 1400	4						
Elective	4						
		18	16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2301	4	HIST elective or integrative 3	4	Vacation		Co-op	
HIST 2302	1	HIST elective or integrative 4	4				
Pre-19th-century ENGL	4	19th-, 20th-, or 21st-century ENGL	4				
ENGL theory/methods	4	Elective	4				
Elective	4						
		17	16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 5	4	Elective		4	Co-op
		ENGL comparative	4	Elective		4	
		ENGL writing	4				
		Elective	4				
		0	16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		HIST elective or integrative 6	4	Elective		4	Co-op
		ENGL diversity	4	Elective		4	
		Elective	4				
		Elective	4				
		0	16		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op		HIST capstone or HIST senior project or ENGL capstone	4
		HIST elective or integrative 7	4
		Elective	4
		Elective	4
		0	16

Total Hours: 131

History and Philosophy, BA

The Department of Philosophy and Religion and the Department of History offer an interdisciplinary combined major in philosophy and history. Students interested in the combined major integrate the study of philosophy and ethics with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Choose one course from the 1000 level.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		

Choose one course from the following: 4

HIST 2390	Africa and the World in Early Times
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 1252	Japanese Literature and Culture
HIST 1270	Ancient Greece
HIST 1271	Ancient Rome
HIST 1285	Introduction to Russian Civilization
HIST 2330	Colonial and Revolutionary America

Intermediate/Advanced History Cluster

Complete (3) History courses numbered 2303 or above. Cluster is subject to Department approval. 12

Advanced History

Complete one history course 3000 level or above 4

History Capstone Seminar or Senior Project

HIST 4701	Capstone Seminar
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Public history concentrators may also select from the following:

HIST 4903	Fieldwork in History 1
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Philosophy Requirements

Code	Title	Hours
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Philosophy Required Courses

PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4

Intermediate/Advanced Electives

Complete three of the following with at least one course at the 4000 or 5000 level: 8

PHIL 3343	Existentialism
PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Additional Electives

Complete three additional PHIL courses. 8

Integrative Courses

Code	Title	Hours
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Complete one of the following: 4

PHIL 2395	Japanese Buddhism
HIST 2308	Law, Justice, and Society in Modern China

History and Philosophy Combined-Major Credit Requirement

Complete 85 semester hours in the major.

Program Requirement

128 total semester hours required

History and Political Science, BA

The Department of History and the Department of Political Science offer an interdisciplinary combined major in history and political science. Students interested in the combined major integrate the study of political systems and theories with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

History Major Requirements

Code	Title	Hours
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History Colloquium

HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4

Introductory Level Course

Complete one course from HIST 1001 to HIST 1999 4

History Seminar and Historical Writing

HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Complete one of the following: 4

HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 1252	Japanese Literature and Culture
HIST 1270	Ancient Greece
HIST 1271	Ancient Rome
HIST 1285	Introduction to Russian Civilization

HIST 2330	Colonial and Revolutionary America	
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Intermediate/Advanced History Cluster

Complete three HIST courses numbered 2300 or above. Cluster is subject to department approval. 12

Advanced History

Complete one HIST course numbered 3000 or above. 4

Political Science Major Requirements

Code	Title	Hours
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Political Science Foundation Courses

POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4

Political Thought

Complete one of the following: 4

POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Electives

Complete three POLS courses numbered 2300 or above. 12

Supporting Courses

Code	Title	Hours
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Complete one of the following: 4

MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Integrative Requirement

Code	Title	Hours
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Integrative Course

Complete one of the following: 4

HIST 1130	Introduction to the History of the United States	
HIST 2211	The World Since 1945	
HIST 2282	The Holocaust and Comparative Genocide	
HIST 3800	American Conservatism from the New Deal to the Present	

Capstone

Complete one of the following. (Public History concentrations take HIST 4903 & HIST 4904) 4

HIST 4701	Capstone Seminar	
HIST 4903	Fieldwork in History 1	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

History and Political Science Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirements

128 total semester hours required

History and Religious Studies, BA

The Department of Philosophy and Religion and the Department of History offer an interdisciplinary combined major in religious studies and history. Students interested in the combined major integrate the study of religious traditions, religious praxis, and religious ethics with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
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History Colloquium

HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4

Introductory Level

Choose one course from the 1000 level. 4

History Seminar and Historical Writing

HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Choose one course from the following: 4

HIST 2390	Africa and the World in Early Times	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	

Intermediate/Advanced History Cluster

Complete (3) History courses numbered 2303 or above. Cluster is subject to Department approval. 12

Advanced History

Complete one history course 3000 level or above 4

Religious Studies Requirements

Code	Title	Hours
Comparative Religion		
Complete two of the following:		8
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2330	Modern Philosophy	
PHIL 4390	Cults and Sects	
Ancient Mediterranean and African World Traditions		
Complete one of the following:		4
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285 or JWSS 1285	Jewish Religion and Culture	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2314	Biblical Prophets and Their Interpreters	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2316	Interpreting the Bible	
PHIL 3410	Religion and Spirituality in the African Diaspora	
PHIL 4390	Cults and Sects	
Asian Traditions		
Complete one of the following:		4
PHIL 1272	Ethics in the World's Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 2398	Religion and Culture in Indian Cinema	
PHIL 4393	Asian Religions in the United States	
PHIL 4545	Religion and Politics in South Asia	
Religion and Culture		
Complete one of the following:		4
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1285 or JWSS 1285	Jewish Religion and Culture	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2316	Interpreting the Bible	

PHIL 4390	Cults and Sects	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
Ethics		
Complete one of the following:		4
PHIL 1130	Ethics: East and West	
PHIL 1272	Ethics in the World's Religions	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 5001	Global Justice	
Religious Studies Electives		
Complete three of the following, two of which must be numbered above 2000:		12
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 1286	American Judaism	
PHIL 1287	Modern Judaism	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 1295	Religious Perspectives on Health and Healing	
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas	
PHIL 1666	The Problem of Evil in Film	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews	
PHIL 2314	Biblical Prophets and Their Interpreters	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2316	Interpreting the Bible	
PHIL 2322	Responses to the Holocaust	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	

PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Integrative Requirements

Code	Title	Hours
Capstone		
Choose one of the following options. Public History concentrators should take HIST 4903 and HIST 4904		4-8
HIST 4701	Capstone Seminar	
PHIL 4390	Cults and Sects	
PHIL 4393	Asian Religions in the United States	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4535	Philosophy of Mind	
PHIL 4545	Religion and Politics in South Asia	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4904	Major Figures in Religious Studies	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
<i>Public History:</i>		
HIST 4903 and HIST 4904	Fieldwork in History 1 and	
Integrative Course		
Complete one of the following courses:		4
HIST 2370	Renaissance to Enlightenment	
PHIL 2395	Japanese Buddhism	
PHIL 4390	Cults and Sects	

History and Religious Studies Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

Media and Screen Studies and History, BA

The Media and Screen Studies Program and the Department of History offer a combined major in media and screen studies and history. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of local and regional histories as well as of the global exchanges between nations, regions, and cultures.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four courses from the following:		16
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3446	Topics in Documentary Production	
MSCR 1230	Introduction to Film Production	

MSCR 2302	Advertising and Promotional Culture
MSCR 2325	Global Media
MSCR 2895	Film Analysis
MSCR 3210	Special Topics in Media and Screen Studies
MSCR 3422	Media Audiences
MSCR 3420	Digital Media Culture
MSCR 3426	Popular Music as Media Form
MSCR 3435	Media Industries
MSCR 3437	Media and Identity

Advanced Media and Screen Electives

Complete two courses from the following: 8

CINE 3389	Screenwriting
CINE 3392	Gender and Film
CINE 3500	Film Theory
CINE 3920	Topics in Film Studies
MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

History Requirements

Code	Title	Hours
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History Colloquium

HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4

Introductory-Level Course

Complete one course in the following range: 4

HIST 1001–HIST 1999

History Seminar and Historical Writing

HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Complete one course from the following: 4

HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 1252	Japanese Literature and Culture
HIST 1270	Ancient Greece
HIST 1271	Ancient Rome
HIST 1285	Introduction to Russian Civilization
HIST 2330	Colonial and Revolutionary America

Intermediate/Advanced History Cluster

Complete three courses in the following range: 12

HIST 2303–HIST 5999

Advanced History

Complete one course in the following range: 4

HIST 3000–HIST 5999	
HIST 4701	Capstone Seminar

Capstone

		4
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Integrative Requirement

Code	Title	Hours
HIST 1279	History of the American Film Industry	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements.

Program Requirement

130 total semester hours required

Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
HIST 1200	1	Intro-level HIST course	4				
HIST 1201	4	Elective	4				
Elective	4						
ENGW 1111	4						
		18		16		8	
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
MSCR elective	4					Elective	4
HIST 2301	4						
HIST 2302	1						
Elective	4						
EEAM 2000	1						
		18		0		0	
						8	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Vacation	
Pre-1800 history elective	4						
Intermediate/advanced history elective 1	4						
Elective	4						
		16		0		0	
						0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Advanced MSCR elective	4	Advanced MSCR elective	4	Vacation		Vacation	0
Intermediate/advanced history elective 2	4	Intermediate/advanced history elective 3	4				

Elective	4	Advanced history elective	4		
HIST 1279	4	Elective	4		
	16		16	0	0

Year 5

Fall	Hours
MSCR 4623	4
HIST capstone	4
Elective	4
Elective	4
	16

Total Hours: 132

History, BS

The Bachelor of Science (BS) degree emphasizes greater specialization in history, either in public history or in a minor field outside of history, and a course in statistics. These programs are designed for students interested in either public history or in quantitative analysis and the mastery of social science models and methods. Students who plan to go to graduate school in history should consider the possibility of taking language courses as electives, since most graduate programs continue to require foreign language competence.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Major Requirements

Code	Title	Hours
Introductory History		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Complete two of the following:		8
HIST 1120	Public History, Public Memory	
HIST 1130	Introduction to the History of the United States	
HIST 1150	East Asian Studies	

HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1190	Picturing Modernity: The Photographic Image in Culture and Society	
HIST 1228	Americans in the World: Trade, Travel, and Diplomacy	
HIST 1246	World War II in the Pacific	
AFAM 1140	Introduction to African-American History	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
History Seminar and Historical Writing		
HIST 2301 and HIST 2302	The History Seminar and Historical Writing	5

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

Additional History Requirements

Code	Title	Hours
Pre-1800 Course		
This course may count toward the history cluster or history elective.		
Complete one of the following:		4
HIST 2390	Africa and the World in Early Times	
HIST 1252	Japanese Literature and Culture	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
HIST 2370	Renaissance to Enlightenment	
HIST 2375	The Tudors, the Stuarts, and the Birth of Modern Britain	

History Outside the United States and Europe

Complete one of the following:		4
HIST 1150	East Asian Studies	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1290	Modern Middle East	
HIST 1500	Modern Chinese History and Culture	
HIST 2211	The World Since 1945	
HIST 2214	War in the Modern World	
HIST 2311	Colonialism/Imperialism	

HIST 2351	Modern Japan
HIST 2390	Africa and the World in Early Times
HIST 4691	Topics in Middle Eastern History

Capstone or Project

<i>Requirement for Non-Public History Concentrators</i>	
HIST 4701	Capstone Seminar 4
<i>Requirement for Public History Concentrators</i>	

Public history concentrators satisfy this requirement within the concentration.

Intermediate/Advanced History Course Requirement

A minimum of three courses from the above requirements must be numbered 2303 or higher. These courses may count toward the history cluster.

Optional Public History Concentration

Note:Public History, Public Memory (HIST 1120) is a prerequisite for Fieldwork in History 1 (HIST 4903) and (HIST 4904).

Code	Title	Hours
Public History Courses		
HIST 1120	Public History, Public Memory	4
HIST 4903	Fieldwork in History 1	4
HIST 4904		4

Graduate Public History Course		
Complete one graduate-level course in public history. See history faculty advisor for an approved list.	4	

Supporting Course

Code	Title	Hours
Research Methods		
Complete one of the following:		4
CS 1100	Computer Science and Its Applications	
ECON 2350	Statistics	
ENVR 5260	Geographical Information Systems	
MATH 2280	Statistics and Software	
POLS 2400	Quantitative Techniques	
PSYC 2320	Statistics in Psychological Research	
SOCL 2320	Statistical Analysis in Sociology	

History Major Credit Requirement

Complete 46 semester hours for the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1000	1	HIST 1130	4	Vacation	0	Vacation	0
HIST 1170	4	MATH 1215	4				
ENGW 1111	4	HIST 1110	4				
Elective	4	Elective	4				
HIST 1200	1						
HIST 1201	4						
		18			16		
					0		
					0		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Research methods course	4	Elective	4	Vacation	4	Co-op	0
Pre-1800 or history elective	4	Pre-1800 or history elective	4				
History elective	4	History cluster course	4				
Elective	4	Elective	4				
		16			16		
					0		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HIST 2301	4	Minor or free elective	4	Co-op	0
		HIST 2302	1	Minor or free elective	4		
		History cluster course	4				
		Upper-division elective	4				
		Elective	4				
		0			17		
					8		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	History cluster course	4	History cluster course	4	Co-op	0
		Upper-division elective	4	Minor or free elective	4		
		Minor or free elective	4				
		Minor or free elective	4				
		0			16		
					8		

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HIST 4701	4				
		Upper-division or minor elective	4				
		Minor or free elective	4				
		Minor or free elective	4				
		0			16		

Total Hours: 131

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1170	4	HIST 1130	4	Vacation	0	Vacation	0
ENGW 1111	4	MATH 1215	4				
Elective	4	HIST 1110	4				
HIST 1200	1	Foreign language course	4				
HIST 1201	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Research methods course	4	Co-op	0	Co-op	0	Elective	4
Pre-1800 or history elective	4					Elective	4
History elective	4						
Elective	4						
	16		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Pre-1800 or history elective	4	Co-op	0	Co-op	0	History cluster course	4
History cluster course	4					Minor or free elective	4
Elective	4						
Upper-division elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2301	4	Co-op	0	Co-op	0	Vacation	0
HIST 2302	1						
History cluster course	4						
Upper-division or minor elective	4						
Upper-division elective	4						
	17		0		0		0

Year 5

Fall	Hours	Spring	Hours
History cluster course	4	HIST 4701	4

Upper-division or minor elective	4	Upper-division or minor elective	4
Minor or free elective	4	Minor or free elective	4
Minor or free elective	4	Minor or free elective	4
	16		16

Total Hours: 130

History, BS with Concentration in Public History**FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1170	4	HIST 1130	4	Vacation	0	Vacation	0
ENGW 1111	4	MATH 1215	4				
BS core course	4	HIST 1110	4				
HIST 1200	1	BS core course	4				
HIST 1201	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Research methods course	4	Elective	4	Vacation	0	Co-op	0
Pre-1800 or history elective	4	Pre-1800 or history elective	4				
Public history elective	4	History cluster course	4				
BS core course	4	Elective	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HIST 2301	4	Elective	4	Co-op	0
		HIST 2302	1	Minor or free elective	4		
		History cluster course	4				
		HIST 4903	4				
		Upper-division elective	4				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	History cluster course	4	History cluster course	4	Co-op	0
		HIST 4904	4	Minor or free elective	4		

Upper-division elective	4		
Minor or free elective	4		
	0	16	8 0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	HIST 4701	4
		HIST graduate elective	4
		Minor or free elective	4
		Minor or free elective	4
	0	16	

Total Hours: 130

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 1170	4	HIST 1130	4	Vacation	0	Vacation	0
ENGW 1111	4	MATH 1215	4				
Elective	4	HIST 1110	4				
HIST 1200	1	Elective	4				
HIST 1201	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Research methods course	4	Co-op	0	Co-op	0	Elective	4
Pre-1800 or history elective	4					Elective	4
Public history elective	4						
Elective	4						
	16		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Pre-1800 or history elective	4	Co-op	0	Co-op	0	History cluster course	4
History cluster course	4					Elective	4
Elective	4						
Minor or free elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HIST 2301	4	Co-op	0	Co-op	0	Vacation	0
HIST 2302	1						

History cluster course	4		
HIST 4903	4		
Minor or free elective	4		
	17	0	0 0

Year 5

Fall	Hours	Spring	Hours
History cluster course	4	HIST 4701	4
HIST 4904	4	HIST graduate elective	4
Minor or free elective	4	Minor or free elective	4
Minor or free elective	4	Minor or free elective	4
	16		16

Total Hours: 130

Computer Science and History, BS

The computer science and history combined major offers students the opportunity to gain both historical knowledge and a broad range of related analytical skills in both the humanities and computer science. You'll define a history course cluster according to a thematic principle, with a focus on quantitative analysis in the field, complementing your foundation in programming.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 16 credits of upper-division CS, IS, or DS courses that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

History Courses

Code	Title	Hours
History Required Courses		
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
History Electives		
Complete one introductory course from the following:		4
AFAM 1140	Introduction to African-American History	
ASNS 1150	East Asian Studies	
HIST 1120	Public History, Public Memory	
HIST 1130	Introduction to the History of the United States	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 1180	African History	
HIST 1185	Introduction to Middle Eastern History	
HIST 1187	Introduction to Latin American History	
HIST 1190	Picturing Modernity: The Photographic Image in Culture and Society	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
Complete one course from the following:		4
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	

HIST 1389	History of Espionage 1: Antiquity to World War II	
HIST 2330	Colonial and Revolutionary America	
Complete three intermediate/advanced-level courses:		12
Select from any HIST course numbered 2303 or above.		
Complete one advanced-level course:		4
Select from any HIST course numbered 3000 or above.		
History Capstone Seminar or Senior Project		
Complete one capstone experience from the following:		4
HIST 4701	Capstone Seminar	
Public history concentrators may also select from the following:		
HIST 4903	Fieldwork in History 1	

Cluster Requirement

Note: Four of the six courses chosen as history electives must create a history cluster of related courses. The history cluster is subject to department approval.

Integrative Course Requirement

Code	Title	Hours
HIST 2211	The World Since 1945	4

Supporting Courses

Code	Title	Hours
Research Methods		
Complete one course from the following:		4
ECON 2350	Statistics	
POLS 2400	Quantitative Techniques	
PSYC 2320	Statistics in Psychological Research	
SOCL 2320	Statistical Analysis in Sociology	
ENVR 3300	Geographic Information Systems	
ENVR 5260	Geographical Information Systems	

Computing and Social Issues

Complete one of the following:		4
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	
PHIL 1145	Technology and Human Values	
SOCL 1280	The 21st-Century Workplace	
SOCL 3485	Environment, Technology, and Society	
SOCL 4528	Computers and Society	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

This requirement is satisfied by HIST 2302 taken in conjunction with HIST 2301.

Required General Electives

Code	Title	Hours
Complete eight general electives.		32

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science and History GPA/Credit Requirement

Complete 98 semester hours in the major with a minimum 2.000 GPA

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Writing-Intensive in the Major
- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

135 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	
CS 1800 and CS 1802	5	IS 2000	4	Elective	4		
CS 2500 and CS 2501	5	CS 3200	4				
ENGW 1111	4	Introductory history elective	4				
HIST 1200	1						
HIST 1201	4						
		20		17		8	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	Elective	4	Co-op	
HIST 2301	4	Elective	4	Elective	4		
HIST 2302	1	CS elective 1	4				
History Pre-1800 elective	4	Intermediate history elective 1	4				
Research methods requirement	4	Intermediate history elective 2	4				
		17		17		8	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	

Intermediate history elective 3	4	Elective	4			
Advanced history elective	4					
Computing and social issues	4					
THTR 1170	1					
		0		17	8	0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 3	4	Elective	4		
		History capstone seminar or senior project	4	Elective	4		
		History integrative requirement	4				
		CS elective 4	4				
		0		16		8	

Total Hours: 136

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1802	5	CS 3200	4				
CS 2500 and CS 2501	5	IS 2000	4				
ENGW 1111	4	Introductory history elective	4				
HIST 1200	1						
HIST 1201	4						
		20		17		0	0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1210	1	Co-op		Co-op		Vacation	
CS 3000	4						
CS 3500	4						
HIST 2301	4						
HIST 2302	1						
Research methods requirement	4						
		18		0		0	0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
History Pre-1800 elective	4	Co-op		Co-op		Elective	4

Intermediate history elective 1	4		Elective	4
Elective	4			
CS elective 1	4			
THTR 1170	1			
	17	0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 2	4	Co-op		Co-op		Elective	4
Intermediate history elective 2	4					Elective	4
Computing and social issues	4						
Elective	4						
	16		0		0		8

Year 5

Fall	Hours	Spring	Hours
CS elective 3	4	CS elective 4	4
Intermediate history elective 3	4	Advanced history elective	4
Elective	4	History capstone seminar or senior project	4
Elective	4	History integrative requirement	4
	16		16

Total Hours: 136

History, Minor

The history minor is designed to be flexible so that students may focus on a tailored course of study. There are no prerequisites: Simply complete five history courses (20 semester hours), of which at least two must be above the 1200 level and must be taken at Northeastern. Students are encouraged to choose a cluster of courses around a particular theme, though this is not required. Existing themes include global conflict and war, ancient and early modern worlds, global cultural history, public history, commodities and capitalism, and global security. Students may also focus on particular areas such as the Americas, Europe, East Asia, and Africa.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Complete five history courses, of which at least two must be taken at Northeastern and must be numbered HIST 1200 or higher. History minors must have a total of 20 semester hours in history.

GPA Requirement

2.000 GPA required in the minor

Human Services

Website (<http://www.northeastern.edu/humanservices>)

Lori Gardinier, PhD

Director, Human Services Program

310 Renaissance Park

617.373.5918

617.373.7905 (fax)

Lori Gardinier, Director, l.gardinier@northeastern.edu

The human services major prepares students for careers in social change by providing the theoretical and skill-based background necessary for practice and research. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at individual and structural levels. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities. Upon completion of the degree students apply professional skills in counseling roles, nonprofit management, political advocacy, or organizational and community development. All students declare a specialization within the major that reflects their particular focus in the field. Human services specializations include applied behavioral analysis, Deaf studies (BA only), family and children's services, identity and social change, psychology/counseling psychology, and social justice and social policy. Additionally, students may have a specific area of interest not currently reflected in the offered specialization. In such cases, students are invited to submit an independent specialization for approval by the program director.

Prepared Specializations

- Applied behavior analysis
- Deaf studies
- Family and children's services
- Identity and social change
- Psychology/counseling psychology
- Social justice and social policy
- Customized specialization

Academic Progression Standards

After four semesters, students must maintain a minimum 2.000 grade-point average (GPA), have earned at least 64 semester hours, and should have completed the following courses:

Code	Title	Hours
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3700	Research Methods for Human Services	4
HUSV 3900	Introduction to Social Policy	4

An approved organizations course

At least one specialization course (see advisor)

In order to take Human Services Internship (HUSV 4994), students must have permission from the internship coordinator at least one semester *prior* to the semester they wish to take the internship course. Internship should be taken either the spring semester of a student's junior year or the fall semester of a student's senior year.

Programs

Bachelor of Arts (BA)

- Human Services (p. 751)
- Human Services and Communication Studies (p. 130)
- Human Services and International Affairs (p. 753)
- Human Services and Sociology (p. 758)
- Political Science and Human Services (p. 757)

Bachelor of Science (BS)

- Human Services (p. 759)
- Human Services and Criminal Justice (p. 646)
- Human Services and Sociology (p. 767)
- American Sign Language and Human Services (p. 661)
- Political Science and Human Services (p. 766)

Minor

- Human Services (p. 768)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Human Services, BA

The human services major prepares students for careers in social change by providing the theoretical and skill-based background necessary for practice and research. Upon completion of the degree, students apply professional skills in counseling roles, nonprofit management, political advocacy, or organizational and community development. Students have an opportunity to develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at individual and structural levels. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities. All students declare a specialization within the major that reflects their particular focus in the field. Human services specializations include applied behavioral analysis, Deaf studies (BA only), family and children's services, identity and social change, psychology/counseling psychology, and social justice and social policy. Additionally, students may have a specific area of interest not currently reflected in the offered specialization. In such cases, students are invited to submit an independent specialization for approval by the program director.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Major Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Research		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services and Diverse Populations		
Complete one of the following:		4
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
HUSV 4866	Intercultural Studies through Human Services	
Human Services Electives		
Complete two HUSV courses.		8
Senior Seminar and Internship		
HUSV 4700	Senior Seminar in Human Services	4
HUSV 4994	Human Services Internship	6
Human Services Specialization for BA Degree		
Complete one of the specializations listed below.		
Code	Title	Hours
Specialization in Deaf Studies		
AMSL 1101	Elementary ASL 1 (normally taken as part of the BA core)	4
AMSL 1102	Elementary ASL 2 (normally taken as part of the BA core)	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
DEAF 1500	Deaf People in Society	4
Specialization in Family and Children's Services		
<i>Required</i>		
HUSV 3520	Child Intervention and Treatment	4
PSYC 1101	Foundations of Psychology	4
or SOCL 1101	Introduction to Sociology	
<i>Elective</i>		
Complete one of the following:		4
CAEP 5150	Early Intervention: Family Systems	
CAEP 5152	Early Intervention: Planning and Evaluating Services	
PSYC 3404	Developmental Psychology	

PSYC 3451	Learning Principles and Behavior Analysis	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1290	Juvenile Delinquency	

Specialization in Psychology/Counseling Psychology*Required*

HUSV 2320	Techniques in Individual and Group Counseling in Human Services	4
HUSV 3540	Services and Treatments for Chemical Dependencies	4

or HUSV 3580 Sexual Violence: Counseling, Programs, and Policy

Elective

Complete one of the following: 4

CAEP 3480	Counseling Theories and Practice	
CAEP 3485	Mental Health and Counseling	
COMM 4535	Nonverbal Social Interaction	
HLTH 5002	Mindfulness: Theory and Practice	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
PHIL 1165	Moral and Social Problems in Healthcare	
PSYC 1101	Foundations of Psychology	
PSYC 3400	Personality	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
NRSRG 1205	Wellness	
SOCL 3441	Sociology of Health and Illness	

Specialization in Social Justice and Social Policy*Required*

COMM 4603		4
POLS 2385		4

Elective

Complete one of the following: 4

COMM 1412	Social Movement Communication	
ECON 1240	Economics of Crime	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
POLS 3307	Public Policy and Administration	
SOCL 1246	Environment and Society	
SOCL 2270	Race and Ethnic Relations	

Specialization in Identity and Social Change*Required*

HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	4

Elective

Complete one of the following: 4

ASNS 2245	The Asian-American Experience	
ENTR 3212	Innovation for Social Change	
COMM 3610	Communication, Politics, and Social Change	

EDUC 5503	Culture, Equity, Power, and Influence	
PHIL 1110	Introduction to Religion	
PHIL 1285	Jewish Religion and Culture	
POLS 2370	Religion and Politics	
SOCL 1260	Gender in a Changing Society	
WMNS 1101	Sex, Gender, and Popular Culture	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
WMNS 2480	Women and World Politics	
WMNS 3100	Gender, Social Justice, and Transnational Activism	

Specialization in Applied Behavior Analysis

PSYC 1101	Foundations of Psychology	4
PSYC 3358	Behavior Therapies	4
PSYC 3450	Learning and Motivation	4
PSYC 4654	Seminar in Behavioral Modification	4

Independent Specialization

With approval from the program director, an independent specialization, consisting of three courses, may be defined in consultation with your advisor. 12

Human Services Major Credit Requirement

Complete 58 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	HUSV 2300	4	Vacation	0	Vacation	0
HUSV 1101	4	HSVC elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
Elective	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC specialization	4	HSVC organization course	4	Vacation	0	Co-op	0
HSVC elective	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Elective	4	Co-op	0
		HUSV 3700	4	Elective	4		

HSVC diverse population course	4			
Foreign language core course	4			
	0	16	8	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HUSV 4994	6	HSVC specialization	4	Co-op	0
		HUSV 3900	4	Elective	4		
		HSVC specialization	4				
		Elective	4				
	0		18		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	HUSV 4700	4
		HSVC elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	HUSV 2300	4	Vacation	0	Vacation	0
HUSV 1101	4	HSVC elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
Elective	4						
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC specialization	4	Co-op	0	Co-op	0	Elective	4
HSVC elective	4					Elective	4
Foreign language core course	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC organization course	4	Co-op	0	Co-op	0	HSVC specialization	4

Foreign language core course	4			Elective	4
Elective	4				
HSVC diverse population course	4				
	16		0		0
					8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Vacation	0
HUSV 3700	4						
HSVC specialization	4						
HSVC elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
HUSV 4994	6	HUSV 4700	4
HUSV 3900	4	Elective	4
Foreign language core course	4	Elective	4
Elective	4	Elective	4
	18		16

Total Hours: 132

Human Services and International Affairs, BA

The combined human services and international affairs degree offers students an understanding of geopolitical realities paired with the practical skills and theory necessary to work in social services and nongovernment organizations (NGOs) impacted by global issues. Students will have the opportunity to prepare for practice in international NGOs through co-ops and Dialogue of Civilization programs. This combined major will prepare students for positions within the nonprofit sector with an international focus.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Research Methods		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Internship		
HUSV 4994	Human Services Internship	6
Human Services Electives		
Complete two HUSV courses.		8

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
or HIST 2211	The World Since 1945	
Global Dynamics		
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	

POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
<i>Human Rights and Social Justice</i>	
INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations

SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
	Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:	12

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times
Asia	
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia
Europe	
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union
Latin America	
ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film

HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature
Middle East	
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

Human Services/International Affairs Integrative Courses

Complete Senior Seminar in Human Services (HUSV 4700) or Senior Capstone Seminar in International Affairs (INTL 4700) or both. Note, however, that students wishing to take HUSV 4700 but not INTL 4700 must meet with an INTL advisor to obtain approval for a substitute INTL course. Similarly, students wishing to take INTL 4700 but not HUSV 4700 must meet with an HUSV advisor to obtain approval for a substitute HUSV course. Substitute courses (HUSV or INTL) must be upper-division courses and must relate to the combined major.

Code	Title	Hours
Human Services		
HUSV 4700	Senior Seminar in Human Services	4
International Affairs		
INTL 4700	Senior Capstone Seminar in International Affairs	4

Human Services and International Affairs Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Elective	4	Vacation	0	Vacation	0
INTL 1000	1	Foreign language core course	4				
INTL 1101	4	HUSV 2300	4				
HUSV 1101	4	ECON 1290	4				
HSVC elective	4						
		17			16		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	HUSV 3700	4				
INTL elective	4	HUSV 3900	4				
HSVC elective	4	EXED 2000	1				
		INTL 3400	4				
		16			17		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		INTL elective	4	INTL elective	4		
		HSVC organization course	4				
		HSVC elective	4				
		0			16		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Elective	4	Co-op	0
		Elective	4	INTL elective	4		
		INTL elective	4				
		HUSV 4994	6				
		0			18		
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4				
		INTL elective	4				
		HUSV 4700	4				
		INTL 4700	4				
		0			16		

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Elective	4	Vacation	0	Vacation	0
INTL 1000	1	Foreign language core course	4				
INTL 1101	4	HUSV 2300	4				
HUSV 1101	4	ECON 1290	4				
HSVC elective	4						
	17		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
Foreign language core course	4					INTL elective	4
HSVC elective	4						
HUSV 3900	4						
EXED 2000	1						
	17		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
INTL elective	4					INTL elective	4
HUSV 3700	4						
HSVC elective	4						
	16		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
INTL elective	4						
HUSV 4994	6						
	18		0		0		0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC organization course	4	INTL elective	4				
HSVC policy course	4	Elective	4				
Elective	4	HUSV 4700	4				
INTL elective	4	INTL 4700	4				
	16		16				

Total Hours: 132

Political Science and Human Services, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Electives		
Complete three courses in the following range:		12
POLS 2330 to POLS 5999		

Supporting Course for Political Science

Code	Title	Hours
Mathematics		
Complete one of the following to fulfill the prerequisite for POLS 2400		4
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4

HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4

Human Services Internship

HUSV 4994	Human Services Internship	6
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Human Services & Diverse Populations

Complete one of the following: 4

HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
HUSV 4866	Intercultural Studies through Human Services	

Human Services Electives

Complete two HUSV courses. 8

Organization

SOCL 3440	Sociology of Human Service Organizations	4
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Integrative Requirements

Code	Title	Hours
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Integrative Courses

POLS 3307	Public Policy and Administration	4
HUSV 3900	Introduction to Social Policy	4

Research Methods

Complete one of the following: 4

POLS 2399	Research Methods in Political Science	
HUSV 3700	Research Methods for Human Services	

Capstone & Elective

Complete one of the following options. 8

Option A

Complete POLS 4701 or POLS 4703 and complete one additional Human Services course that has not been used in previous requirements.

POLS 4701	Political Science Senior Capstone	
or POLS 4703	Senior Thesis	
HUSV 1000 to HUSV 5999		

Option B

Complete HUSV 4700 and complete one additional Political Science course numbered 2300 or higher that has not been used in previous requirements.

HUSV 4700	Senior Seminar in Human Services	
POLS 2300 to POLS 5999		

Political Science and Human Services Combined-Major Credit Requirement

Complete 86 semester hours in the major.

Program Requirement

128 total semester hours required

Human Services and Sociology, BA

Students pursuing a combined degree in human services and sociology will integrate the theoretical understandings of these two fields to better understand organizational and group behavior and their implications for individuals and communities utilizing human services. The human

services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. The sociology major prepares students to rigorously analyze the social, political, and economic spheres of society at the local and global levels. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. The combined major provides students with the conceptual and practical tools to understand how various features of society affect its members as well as how people create social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
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Human Services Overview

HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4

Policy

HUSV 3900	Introduction to Social Policy	4
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Research Methods

Complete option A or option B: 4

Option A

HUSV 3700	Research Methods for Human Services	
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Option B

Complete the following and one additional HUSV course:

SOCL 2321	Research Methods in Sociology	
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Organization

SOCL 3440	Sociology of Human Service Organizations	4
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Human Services Internship

HUSV 4994	Human Services Internship	6
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Human Services Elective

Complete one additional HUSV course. 4

Senior Capstone ¹		
HUSV 4700	Senior Seminar in Human Services	4

¹ With permission of human services, the student may complete sociology capstone Senior Seminar (SOCL 4600) and substitute one advanced human services elective for Senior Seminar in Human Services (HUSV 4700).

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 3440	Sociology of Human Service Organizations	4

Introductory Electives

Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1246	Environment and Society	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1285	Deviant Behavior and Social Control	
SOCL 1290	Juvenile Delinquency	
SOCL 1295	Drugs and Society	
ANTH 1101	Peoples and Cultures	

Intermediate-Level Elective

Complete one of the following:		4
SOCL 2205	Law and Social Justice	
SOCL 2268	Social Movements	
SOCL 2270	Race and Ethnic Relations	
SOCL 2358	Current Issues in Cities and Suburbs	
SOCL 2450	Class, Power, and Social Change	
SOCL 3441	Sociology of Health and Illness	
SOCL 3487	Applied Sociology: Practice and Theory	
ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective	
ANTH 2305	Global Markets and Local Culture	
ANTH 2350	Urban Anthropology	

Advanced-Level Elective

Complete one of the following:		4
SOCL 4514	"The Wire" and the Study of Urban Inequalities	
SOCL 4518	Law and Society in a Digital World	
SOCL 4520	Race, Class, and Gender	
SOCL 4523	Sexualities	
SOCL 4580	Special Topics in Sociology	
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	

ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	
ANTH 4580	Special Topics in Anthropology	

Senior Seminar ²		
SOCL 4600	Senior Seminar	4

² With permission of the sociology head advisor, the student may complete human services capstone Senior Seminar in Human Services (HUSV 4700) and substitute one advanced sociology elective for Senior Seminar (SOCL 4600).

Human Services/Sociology Integrative Course

Code	Title	Hours
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Human Services and Sociology Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

Human Services, BS

The human services major prepares students for careers in social change by providing the theoretical and skill-based background necessary for practice and research. Upon completion of the degree, students apply professional skills in counseling roles, nonprofit management, political advocacy, or organizational and community development. Students have an opportunity to develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at individual and structural levels. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities. All students declare a specialization within the major that reflects their particular focus in the field. Human services specializations include applied behavioral analysis, Deaf studies (BA only), family and children's services, identity and social change, psychology/counseling psychology, and social justice and social policy. Additionally, students may have a specific area of interest not currently reflected in the offered specialization. In such cases, students are invited to submit an independent specialization for approval by the program director.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Major Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Research		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services and Diverse Populations		
Complete one of the following:		4
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
HUSV 4866	Intercultural Studies through Human Services	
Human Services Electives		
Complete two HUSV courses.		8
Senior Seminar and Internship		
HUSV 4700	Senior Seminar in Human Services	4
HUSV 4994	Human Services Internship	6
Human Services Specialization for BS Degree		
Complete one of the specializations listed below.		
Code	Title	Hours
Family and Children's Services		
<i>Required</i>		
HUSV 3520	Child Intervention and Treatment	4
PSYC 1101 or SOCL 1101	Foundations of Psychology Introduction to Sociology	4
<i>Electives</i>		
Complete three of the following:		12
CAEP 5150	Early Intervention: Family Systems	
CAEP 5151	Early Intervention: Infant and Toddler Development, Risk, and Disability	
PSYC 3404	Developmental Psychology	
PSYC 3451	Learning Principles and Behavior Analysis	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1290	Juvenile Delinquency	

Psychology/Counseling Psychology

Required

HUSV 2320	Techniques in Individual and Group Counseling in Human Services	4
HUSV 3540 or HUSV 3580	Services and Treatments for Chemical Dependencies Sexual Violence: Counseling, Programs, and Policy	4

Electives

Complete three of the following:		12
CAEP 3480	Counseling Theories and Practice	
CAEP 3485	Mental Health and Counseling	
COMM 4535	Nonverbal Social Interaction	
HLTH 5002	Mindfulness: Theory and Practice	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
PHIL 1165	Moral and Social Problems in Healthcare	
PSYC 1101	Foundations of Psychology	
PSYC 3400	Personality	
PSYC 3404	Developmental Psychology	
PSYC 3406	Abnormal Psychology	
NRSO 1205	Wellness	
SOCL 3441	Sociology of Health and Illness	

Social Justice and Social Policy

Required

COMM 4603		4
POLS 2385		4

Electives

Complete three of the following:		12
COMM 1412	Social Movement Communication	
ECON 1240	Economics of Crime	
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
POLS 3307	Public Policy and Administration	
SOCL 1246	Environment and Society	
SOCL 2270	Race and Ethnic Relations	

Identity and Social Change

Required

HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	4

Electives

Complete three of the following:		12
ASNS 2245	The Asian-American Experience	
EDUC 5503	Culture, Equity, Power, and Influence	
ENTR 3212	Innovation for Social Change	
COMM 3610	Communication, Politics, and Social Change	
PHIL 1110	Introduction to Religion	
PHIL 1185	The Ethics of Food	

PHIL 3500	Sexuality, Gender, and the Law
SOCL 1260	Gender in a Changing Society
WMNS 1101	Sex, Gender, and Popular Culture
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies
WMNS 2480	Women and World Politics
WMNS 3100	Gender, Social Justice, and Transnational Activism

Applied Behavior Analysis

Required

PSYC 1101	Foundations of Psychology	4
PSYC 3358	Behavior Therapies	4
PSYC 3450	Learning and Motivation	4
PSYC 4654	Seminar in Behavioral Modification	4

Electives

Complete one of the following:		4
PSYC 3400	Personality	
PSYC 3404	Developmental Psychology	
PSYC 3466	Cognition	

Independent Specialization

With approval from the program director, an independent specialization, consisting of five courses, may be defined in consultation with your advisor. 20

Human Services Major Credit Requirement

Complete 66 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	HUSV 2300	4	Vacation	0	Vacation	0
HUSV 1101	4	HSVC elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
Elective	4						
		17		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC specialization	4	HSVC organization course	4	Vacation	0	Co-op	0
HSVC elective	4	HSVC specialization	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
		16		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Elective	4	Co-op	0

HUSV 3700	4	HSVC specialization	4
HSVC specialization	4		
Elective	4		
		16	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HUSV 3900	4	HSVC specialization	4	Co-op	0
		HUSV 4994	6	Elective	4		
		Elective	4				
		HSVC diverse population course	4				
		18		8		0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	HUSV 4700	4
		HSVC elective	4
		Upper-division elective	4
		Elective	4
		16	

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	HUSV 2300	4	Vacation	0	Vacation	0
HUSV 1101	4	HSVC elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
Elective	4						
		17		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC specialization	4	Co-op	0	Co-op	0	Elective	4
HSVC elective	4					Elective	4
Elective	4						
Elective	4						
EESH 2000	1						
		17		0		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HSVC organization course	4	Co-op	0	Co-op	0	HSVC specialization	4

HSVC diverse population course	4		Elective	4
ENGW 3315	4			
Elective	4			
	16	0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 3700	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
HSVC specialization	4						
HSVC elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
HUSV 4994	6	HUSV 4700	4
HUSV 3900	4	HSVC specialization	4
HSVC specialization	4	Elective	4
Elective	4	Elective	4
	18		16

Total Hours: 132

American Sign Language and Human Services, BS

The American Sign Language (ASL) Program curriculum is an intensive program of study dedicated to preparing individuals to interact in a positive and supportive manner with members of the American Deaf Community. This Program is designed to assist students in acquiring competence in American Sign Language, developing an understanding of the American Deaf Community and its culture, and applying their linguistic and cultural skills and knowledge to a particular academic area of study.

The ASL Program offers a wide array of courses as well as volunteer, internship, and practicum opportunities. Students pursuing a combined major in Human Services integrate their foundation in ASL and the Deaf Community with Human Service organizations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

American Sign Language Requirements

Code	Title	Hours
American Sign Language		
AMSL 1101	Elementary ASL 1	4
AMSL 1102	Elementary ASL 2	4
AMSL 2101	Intermediate ASL 1	4
AMSL 2102	Intermediate ASL 2	4
AMSL 3101	Advanced ASL 1	4
AMSL 3102	Advanced ASL 2	4
Social and Cultural World		
DEAF 1500	Deaf People in Society	4
DEAF 2500	Deaf History and Culture	4
Linguistics		
LING 1150	Introduction to Language and Linguistics	4
DEAF 2700	ASL Linguistics	4
Performance Interpreting		
INTP 3500	The Interpreting Profession	2
Interpreting		
INTP 3510	Interpreting Inquiry Texts	4

Human Services Requirements

Code	Title	Hours
Human Services		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 4700	Senior Seminar in Human Services	4
Research		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organizations		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services Elective		
	Complete one course in HUSV subject area.	4

Integrative Requirement

Code	Title	Hours
INTP 4940	Interpreting Research Practicum	4
HUSV 4994	Human Services Internship	6

Combined-Major GPA Requirement

Minimum 2.750 GPA required in all ASL courses

Minimum 2.500 overall GPA required

Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirements

128 total semester hours required

Plan of Study

Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 1101	4	AMSL 1102	4	Vacation	0	Vacation	0
DEAF 1500	4	MATH 1215	4				
HUSV 1101	4	HSVC elective	4				
ENGW 1111	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
AMSL 2101	4	AMSL 2102	4	Vacation	0	Vacation	0
LING 1150	4	DEAF 2700	4				
INTP 4560	4	HUSV 2300	4				
Elective	4	Elective	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
DEAF 2500	4	HUSV 3700	4	Vacation	0	Vacation	0
SOCL 3440	4	Elective	4				
INTP 3510	4	ENGW 3315	4				
AMSL 3101	4	AMSL 3102	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
INTP 4940	4	HUSV 4700	4
HUSV 3900	4	Elective	4
HUSV 4994	6	Elective	4
Elective	4	Elective	4
	18		16

Total Hours: 130

Human Services and Communication Studies, BA

The intersection of communications studies and human services practices spans several domains. Nonprofit organizations depend on communications professionals to effectively represent their work to the community, partner organizations, and funders. Knowledge and skills developed in communications studies also service human services professionals working in the political realm as they seek to promote impactful social policies.

The human services major is designed to prepare students for careers in social change by providing them with the theoretical and skill-based background necessary for practice and research. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 3700	Research Methods for Human Services	4
HUSV 3900	Introduction to Social Policy	4
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Internship		
HUSV 4994	Human Services Internship	6
Human Services Electives		
Complete two additional HUSV courses.		8

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
or COMM 2301	Communication Research Methods	
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	

COMM 2304	Communication and Gender
COMM 2501	Communication Law
COMM 2551	Free Speech in Cyberspace

Writing-Intensive Courses

Complete two of the following: 8

COMM 3200	Mobile Communication
COMM 3201	Health Communication
COMM 3230	Interpersonal Communication
COMM 3304	Communication and Inclusion
COMM 3320	Political Communication
COMM 3330	Argumentation Theory
COMM 3400	Rhetoric of Science
COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete three of the following: 12

COMM 1331	Legal Argumentation, Advocacy, and Citizenship
COMM 1412	Social Movement Communication
COMM 1511	Communication and Storytelling
COMM 1990	Elective
COMM 2105	Social Networks
COMM 2350	Producing for the Entertainment Industry
COMM 2450	Sound Production for Digital Media
COMM 2990	Elective
COMM 3306	International Communication Abroad
COMM 3409	Advocacy Writing
COMM 3451	Advertising Practices
COMM 3534	
COMM 3550	Television Field Production
COMM 3650	Television Studio Production
COMM 3990	Elective
COMM 4650	Digital Editing for TV
COMM 4940	Special Topics in Media Production
COMM 4990	Elective
COMM 4992	Directed Study
COMM 4993	Independent Study
COMM 4994	Internship in Communication

Capstone

Code	Title	Hours
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Communications Capstone Option

Complete one of the following: 4

COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	
COMM 4625	Online Communities	
Complete one additional HUSV elective.		4

Human Services Capstone Option

HUSV 4700	Senior Seminar in Human Services	4
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Complete one course in the following range: 4

COMM 3000 to COMM 4999		
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Integrative Course

Code	Title	Hours
HUSV 3590	Nonprofit Communications	4

Program Requirement

128 total semester hours required

Human Services and Criminal Justice, BS

A combined major in human services and criminal justice appeals to students interested in the intersection of social and legal issues and institutions. The human services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. Students with criminal justice course work gain a rigorous interdisciplinary and experiential education in the causes and consequences of crime and the responses of criminal justice. The addition of human services course work complements a criminal justice perspective and considers the role of social services and community-based organizations to prevent, intervene, and treat the causes and consequences of crime. The degree allows students to combine interests in the justice system, political advocacy, and community development. Students engage in an integrated educational program that emphasizes experiential approaches to learning through service-learning, co-op, and internship opportunities.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Foundation Courses

Code	Title	Hours
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Introduction to the Major

CRIM 1000	Criminal Justice at Northeastern	1
or HUSV 1000	Human Services at Northeastern	

Criminal Justice Foundation Courses

CRIM 1100	Introduction to Criminal Justice	4
CRIM 1300	The Death Penalty	4
or CRIM 1400	Human Trafficking	
or CRIM 1500	Corruption, Integrity, and Accountability	
or CRIM 1700	Crime, Media, and Politics	
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CS 1100	Computer Science and Its Applications	4
Human Services Foundation Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4

Upper-Level Courses

Code	Title	Hours
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Policy Course

HUSV 3900	Introduction to Social Policy	4
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Organization Course

SOCL 3440	Sociology of Human Service Organizations	4
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Survey Electives

Complete two of the following: 8

CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	

Research Methods

CRIM 3600	Criminal Justice Research Methods	4
or HUSV 3700	Research Methods for Human Services	

Criminal Justice Elective

Complete one of the following: 4

CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4040	Crime Prevention	

Statistics

Complete one of the following: 4

CRIM 3700	Criminal Justice Statistics	
PSYC 2320	Statistics in Psychological Research	
SOCL 2320	Statistical Analysis in Sociology	

Human Services Internship

Code	Title	Hours
HUSV 4994	Human Services Internship	6

Integrative Course

Code	Title	Hours
CRIM 4949	Senior Capstone Seminar	4
or HUSV 4700	Senior Seminar in Human Services	

Open Electives

Code	Title	Hours
Complete seven courses. Two of these courses must be in criminal justice and four must be in human services.		
		28

Cooperative Education for Criminal Justice

Code	Title	Hours
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Co-op Integration Seminar 1/Professional Development

All students should complete one of the following: 1

CRIM 2000	Co-op Integration Seminar 1	
EESH 2000	Professional Development for Co-op	

Co-op Integration Seminars 2 and 3

Co-op students should complete the following:

CRIM 3000	Co-op Integration Seminar 2	1
CRIM 4000	Co-op Integration Seminar 3	1

Non-co-op students should complete an additional 2 semester hours of open elective credit.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HUSV 1000	1	CRIM 1200	4	Vacation	0	Vacation	0
CRIM 1100	4	HUSV 2300	4				
HUSV 1101	4	CS 1100	4				
ENGW 1111	4	HSVC elective	4				
MATH 1215	4						
		17	16	0	0		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CRIM 2100	4	CRIM 2000	1	Vacation	0	Co-op	0
CRIM 2200	4	CJ concentration elective	4				
HSVC intermediate/advanced undergraduate elective	4	CJ concentration elective	4				
Elective	4	Elective	4				
		16	17	0	0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	CRIM 3000	1	CRIM 3600	4	Co-op	0
		Elective	4	Elective	4		
		HUSV 3900	4				

	HSVC organization course	4			
		0	13	8	0
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	CRIM 4000	1	Elective	4
		CJ system-wide elective	4	Elective	4
		ENGW 3315	4		
		Elective	4		
		CRIM 3700	4		
		0	17	8	0
Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	HUSV 4994	6		
		Elective	4		
		CRIM 4949 or HUSV 4700	4		
		Elective	4		
		0	18		

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
HUSV 1000	1	CRIM 1200	4	Vacation	0
CRIM 1100	4	HUSV 2300	4		
HUSV 1101	4	CS 1100	4		
ENGW 1111	4	HSVC elective	4		
MATH 1215	4				
		17	16	0	0
Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
CRIM 2100	4	Co-op	0	Co-op	0
CRIM 2200	4			Elective	4
CRIM 2000	1				
HUSV 2300	4				
Elective	4				
		17	0	0	8
Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
CJ concentration elective	4	Co-op	0	Co-op	0
CJ concentration elective	4			HUSV 3900	4
Elective	4				
Elective	4				
CRIM 3000	1				
		17	0	0	8

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
CRIM 3600	4	Co-op	0	Co-op	0
HSVC organization course	4			Vacation	0
CJ system-wide elective	4				
Elective	4				
CRIM 4000	1				
		17	0	0	0

Year 5					
Fall	Hours	Spring	Hours		
CRIM 3700	4	Elective	4		
HUSV 4994	6	Elective	4		
ENGW 3315	4	CRIM 4949 or HUSV 4700	4		
Elective	4	Elective	4		
		18	16		

Total Hours: 134

Political Science and Human Services, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	

POLS 2332	Contemporary Political Thought	
Political Science Electives		
Complete three courses in the following range:		12
POLS 2330 to POLS 5999		
Total Hours		32

Supporting Course for Political Science

Code	Title	Hours
Mathematics		
Complete one of the following to fulfill the prerequisite for POLS 2400		4
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Human Services Internship		
HUSV 4994	Human Services Internship	6
Human Services & Diverse Populations		
Complete one of the following:		4
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
HUSV 4866	Intercultural Studies through Human Services	
Human Services Electives		
Complete two HUSV courses.		8
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Total Hours		34

Supporting Course for Human Services

Code	Title	Hours
Organization		
SOCL 3440	Sociology of Human Service Organizations	4

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3307	Public Policy and Administration	4
HUSV 3900	Introduction to Social Policy	4
Research Methods		
Complete one of the following:		4
POLS 2399	Research Methods in Political Science	
HUSV 3700	Research Methods for Human Services	
Capstone & Elective		

Complete one of the following options. 8

Option A	
Complete POLS 4701 or POLS 4703 and complete one additional Human Services course that has not been used in previous requirements.	
POLS 4701	Political Science Senior Capstone or POLS 4703 Senior Thesis
HUSV 1000 to HUSV 5999	
Option B	
Complete HUSV 4700 and complete one additional Political Science course numbered 2300 or higher that has not been used in previous requirements.	
HUSV 4700	Senior Seminar in Human Services
POLS 2300 to POLS 5999	

Political Science and Human Services Combined-Major Credit Requirement

Complete 86 semester hours in the major.

Program Requirement

128 total semester hours required

Human Services and Sociology, BS

Students pursuing a combined degree in human services and sociology will integrate the theoretical understandings of these two fields to better understand organizational and group behavior and their implications for individuals and communities utilizing human services. The human services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. The sociology major prepares students to rigorously analyze the social, political, and economic spheres of society at the local and global levels. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. The combined major provides students with the conceptual and practical tools to understand how various features of society affect its members as well as how people create social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 3900	Introduction to Social Policy	4
Research Methods		
Complete option A or option B:		4
<i>Option A</i>		
HUSV 3700	Research Methods for Human Services	
<i>Option B</i>		
Complete the following and one additional HUSV course:		
SOCL 2321	Research Methods in Sociology	
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services Internship		
HUSV 4994	Human Services Internship	6
Human Services Elective		
Complete one additional HUSV course.		4
Senior Capstone ¹		
HUSV 4700	Senior Seminar in Human Services	4

¹ With permission of human services, the student may complete sociology capstone Senior Seminar (SOCL 4600) and substitute one advanced human services elective for Senior Seminar in Human Services (HUSV 4700).

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 3440	Sociology of Human Service Organizations	4
Introductory Electives		
Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1246	Environment and Society	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1285	Deviant Behavior and Social Control	
SOCL 1290	Juvenile Delinquency	
SOCL 1295	Drugs and Society	
ANTH 1101	Peoples and Cultures	
Intermediate-Level Elective		
Complete one of the following:		4

SOCL 2205	Law and Social Justice
SOCL 2268	Social Movements
SOCL 2270	Race and Ethnic Relations
SOCL 2358	Current Issues in Cities and Suburbs
SOCL 2450	Class, Power, and Social Change
SOCL 3441	Sociology of Health and Illness
SOCL 3487	Applied Sociology: Practice and Theory
ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ANTH 2350	Urban Anthropology

Advanced-Level Elective

Complete one of the following:		4
SOCL 4514	"The Wire" and the Study of Urban Inequalities	
SOCL 4518	Law and Society in a Digital World	
SOCL 4520	Race, Class, and Gender	
SOCL 4523	Sexualities	
SOCL 4580	Special Topics in Sociology	
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	
ANTH 4580	Special Topics in Anthropology	

Senior Seminar

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SOCL 4600	Senior Seminar	4
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² With permission of the sociology head advisor, the student may complete Senior Seminar in Human Services (HUSV 4700) and substitute one advanced sociology elective for Senior Seminar (SOCL 4600).

Human Services/Sociology Integrative Course

Code	Title	Hours
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Human Services and Sociology Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

Human Services, Minor

The human services minor is designed to prepare students for careers in social change by providing the theoretical and skill-based background necessary for practice and research. Students have an opportunity to develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at individual and structural levels. Students engage in an integrated

educational program that emphasizes experiential approaches to learning through service-learning. The minor provides a nice complement to students who are interested in the role of nonprofit and social change organizations as it relates to their major. The course work students will take in the human services program provides an opportunity to apply social and psychological theories and develop direct practice experience through service-learning.

The minor in human services may help lead to careers in many diverse areas of social change or to graduate programs in social work, health, counseling, rehabilitation, and law. Human services professions are among the fastest-growing occupations in the nation. Society recognizes the necessity, value, and reward of dedicating time and energy to helping people. Combining a human services minor with any major gives students the opportunity to learn about the individual community and political interventions for social change.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4

Policy Course

Code	Title	Hours
HUSV 3900	Introduction to Social Policy	4

Organization Course

Code	Title	Hours
Complete one of the following:		
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
SOCL 3440	Sociology of Human Service Organizations	

Human Services Elective

Code	Title	Hours
Complete one HUSV course.		4

GPA Requirement

2.000 GPA required in the minor

International Affairs

Website (<http://www.northeastern.edu/internationalaffairs>)

Berna Turam, PhD

Professor, Sociology and International Affairs, and Director, International Affairs Program

201 Renaissance Park
617.373.5472

Kimberly Jones, Head Advisor, k.jones@northeastern.edu
Ioannis Livanis, Advisor, i.livanis@northeastern.edu

International affairs is an interdisciplinary major in the College of Social Sciences and Humanities. The program is designed to prepare

undergraduate students with the knowledge and skills needed to thrive and lead in a diverse world society while promoting global citizenship and social responsibility.

Academic Progression Standards

It is recommended that students majoring in international affairs maintain a minimum 3.000 grade-point average until the beginning of their international experience in order to be eligible for the majority of the study-abroad options.

Cooperative Education

Cooperative education is recommended for all students pursuing a major or combined major in international affairs.

Programs

Bachelor of Arts (BA)

- International Affairs (p. 769)
- International Affairs with African Studies Concentration (p. 773)
- International Affairs with Asian Studies Concentration (p. 775)
- International Affairs with European Studies Concentration (p. 777)
- International Affairs with Latin American Studies Concentration (p. 779)
- International Affairs with Middle East Studies Concentration (p. 781)
- Environmental Studies and International Affairs (p. 522)
- Human Services and International Affairs (p. 753)
- International Affairs and Cultural Anthropology (p. 790)
- International Affairs and Economics (p. 676)
- International Affairs and Religious Studies (p. 796)
- Political Science and International Affairs (p. 800)
- Sociology and International Affairs (p. 805)
- Spanish and International Affairs (p. 654)

Minors

- International Affairs (p. 811)
- Middle East Studies (p. 813)

International Affairs, BA

The international affairs program provides a rigorous inter- and multidisciplinary curriculum while also giving students flexibility to select the courses and disciplines that interest them most. Successful undergraduate students develop an awareness of global affairs and international issues since the early 20th century through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
ANTH 1101	Peoples and Cultures	4
POLS 1160	International Relations	4
HIST 2211	The World Since 1945	4
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4
Global Dynamics		
Complete three of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		10-12
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	

INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
AFAM 2639	Globalism, Racism, and Human Rights
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War. History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2300	Religion in International Affairs
INTL 2240	Global Population and Development
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 3200 or SOCL 3200	Cities in a Global Context Cities in Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora

AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
ANTH 1101	Peoples and Cultures	
ANTH 2350	Urban Anthropology	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
<i>Development</i>		
INTL 2240	Global Population and Development	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
ANTH 2305	Global Markets and Local Culture	
ECON 1291	Development Economics	
ECON 3404	International Food Economics and Policy	
ENTR 2206	Global Social Enterprise	
ENVR 4515	Sustainable Development	
INTB 1203	International Business and Global Social Responsibility	
or INTB 1209	International Business and Global Social Responsibility	
PHTH 5230	Global Health	
POLS 3487	Politics of Developing Nations	
<i>Communication and Media</i>		
COMM 2303	Global and Intercultural Communication	
INTB 3310	Cultural Aspects of International Business	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	
or INTL 3300	Covering Conflicts: Peace, War, and the Media	
JRNL 5360	Global Reporting	
MSCR 2325	Global Media	
MUSC 1140	Global Pop Music	
Senior Seminar/Experiential Learning		
INTL 4700	Senior Capstone Seminar in International Affairs	4

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Complete three of the following courses, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:

Code	Title	Hours
Africa		
AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	

AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	
Asia		
ANTH 4350	Ethnography of Southeast Asia	
or INTL 4350	Ethnography of Southeast Asia	
ASNS 1150	East Asian Studies	
or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Europe		
CLTR 1501	Introduction to French Culture	
CLTR 1503	Introduction to Italian Culture	
CLTR 1504	Introduction to Spanish Culture	
ECON 1293	European Economic History	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2370	Renaissance to Enlightenment	
HIST 2376	Britain and the British Empire	
HIST 4946	Independent Field Research Abroad: Central Europe	
POLS 3435	Politics and Governance of Europe and the European Union	
Latin America		
ANTH 4500	Latin American Society and Development	
or INTL 4500	Latin American Society and Development	
CLTR 1505	Introduction to Latin American Culture	
CLTR 1240	Latin American Film	
HIST 1187	Introduction to Latin American History	
LACS 1220	Latino, Latin American, and Caribbean Studies	
LITR 4655	Latin American Literature	

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215 or INTL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

International Affairs Major Credit/GPA Requirement

Complete 52 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives at 3000 level or above that do not double-count with the major or NUpath.

Program Requirement

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
INTL 1101	4	HIST 2211	4				
ENGW 1111	4	Foreign language course	4				
Foreign language course	4	POLS 1160	4				
ANTH 1101	4	POLS 1161	0				
	17		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115 or 1116	4	INTL elective	4	Vacation	0	Co-op	0
INTL 2718	4	Foreign language course	4				
Elective	4	INTL elective	4				
Foreign language course	4	Elective	4				
		EESH 2000	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL 3400	4	INTL elective	4	Co-op	0
		ENGW 3315	4	Elective	4		
		INTL elective	4				
		Upper-division elective	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL elective	4	Elective	4	Co-op	0
		INTL elective	4	Elective	4		
		Upper-division elective	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	INTL 4700	4
		Elective	4
		Upper-division elective	4
		Elective	4
	0		16

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
INTL 1101	4	HIST 2211	4				
ENGW 1111	4	Foreign language course	4				
Foreign language course	4	POLS 1160	4				
ANTH 1101	4	POLS 1161	0				
	17		16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 2718	4	Co-op	0	Co-op	0	INTL elective	4
INTL elective	4					Elective	4
Foreign language course	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1115 or 1116	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
INTL elective	4						
Foreign language course	4						
	16		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
ENGW 3315	4						
INTL elective	4						
Upper-division elective	4						
	16		0		0		0

Year 5			
Fall	Hours	Spring	Hours
INTL elective	4	INTL 4700	4
INTL elective	4	Elective	4
Upper-division elective	4	Upper-division elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

International Affairs with African Studies Concentration, BA

Through this concentrated major, successful undergraduates will develop an awareness of global affairs related to Africa since the early 20th century through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Note: Students double majoring in international affairs and political science may only count two political science courses toward the international affairs major.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
AFRS 1101	Introduction to African Studies	4
ANTH 1101	Peoples and Cultures	4
ECON 1115 or ECON 1116	Principles of Macroeconomics Principles of Microeconomics	4
HIST 2211	The World Since 1945	4
INTL 1101	Globalization and International Affairs	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1155	Comparative Politics	4
African Studies Regional Analysis Courses		
Complete four of the following, at least two of which must be numbered 2000 or above:		16
AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	
Global Dynamics		
POLS 1160	International Relations	

Complete one of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.

Environment

ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice

Conflict and Security

CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection

Globalization

INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights

4	ANTH 2305	Global Markets and Local Culture
	ANTH 2315	Religion and Modernity
	ECON 1290	History of the Global Economy
	ECON 4635	International Economics
	ENGL 2450	Postcolonial Literature
	HIST 2211	The World Since 1945
	HIST 2311	Colonialism/Imperialism
	INTB 3310	Cultural Aspects of International Business
	LPSC 2302	Global Human Rights: A Social and Economic Perspective
	POLS 1160	International Relations
	POLS 2370	Religion and Politics
	POLS 3405	International Political Economy
	POLS 3406	International Law
	POLS 3407	International Organizations
	SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media

JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

Senior Seminar/Experiential Learning

INTL 4700	Senior Capstone Seminar in International Affairs	4
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International Experience in Africa

Complete at least one “international semester” via study abroad, international internship, two Dialogue of Civilizations programs, or international co-op. International students may be exempt from the semester abroad (subject to advisor approval). If they do not complete an international semester, they must participate in Model African Union.

Foreign Language Requirement

Complete language course work in Kiswahili, French, or Arabic through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

International Affairs Major Credit/GPA Requirement

Complete 60 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives numbered 3000 or above.

Program Requirement

128 total semester hours required

International Affairs with Asian Studies Concentration, BA

Through this concentrated major, successful undergraduates will develop an awareness of global affairs related to Asia since the early 20th century through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Note: Students double majoring in international affairs and political science may only count two political science courses toward the international affairs major.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics or regional analysis requirements. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
ANTH 1101	Peoples and Cultures	4
ASNS 1150	East Asian Studies	4
or HIST 1150	East Asian Studies	
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
HIST 2211	The World Since 1945	4
INTL 1101	Globalization and International Affairs	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1155	Comparative Politics	4
Asian Studies Regional Analysis Courses		
Select courses taken during a study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		
Complete four of the following, at least two of which must be numbered 2000 or above:		16
ANTH 4350	Ethnography of Southeast Asia	
or INTL 4350	Ethnography of Southeast Asia	
ASNS 1150	East Asian Studies	
or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Global Dynamics		
POLS 1160	International Relations	4

Complete one of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements. 4

Environment

ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice

Conflict and Security

CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection

Globalization

INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights

ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media

JRNL 5360	Global Reporting	
MSCR 2325	Global Media	
MUSC 1140	Global Pop Music	
Senior Seminar/Experiential Learning		
INTL 4700	Senior Capstone Seminar in International Affairs	4

International Experience in Asia

Complete at least one “international semester” via study abroad, international internship, two Dialogue of Civilizations programs, or international co-op. International students may be exempt from the semester abroad (subject to advisor approval).

Foreign Language Requirement

Complete language course work in Chinese or Japanese through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

International Affairs Major Credit/GPA Requirement

Complete 60 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives numbered 3000 or above.

Program Requirement

128 total semester hours required

International Affairs with European Studies Concentration, BA

Through this concentrated major, successful undergraduates will develop an awareness of global affairs related to Europe since the early 20th century through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Note: Students double majoring in international affairs and political science may only count two political science courses toward the international affairs major.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
ANTH 1101	Peoples and Cultures	4
INTL 1101	Globalization and International Affairs	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
HIST 2211	The World Since 1945	4
POLS 1155	Comparative Politics	4
POLS 3435	Politics and Governance of Europe and the European Union	4

European Studies Regional Analysis Courses

Select courses taken during a study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.

Complete four of the following, at least two of which must be numbered 2000 or above:	16
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Global Dynamics

POLS 1160	International Relations	4
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Complete one of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.

Environment

ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics

INTL 5200	Political Economy: Interdisciplinary Perspectives	LPSC 2302	Global Human Rights: A Social and Economic Perspective
COMM 2303	Global and Intercultural Communication	POLS 1160	International Relations
POLS 1155	Comparative Politics	POLS 2370	Religion and Politics
POLS 1160	International Relations	POLS 3405	International Political Economy
POLS 2370	Religion and Politics	POLS 3406	International Law
POLS 3405	International Political Economy	POLS 3407	International Organizations
POLS 3406	International Law	SOCL 3465	Globalization and the Evolution of Human Societies
POLS 3407	International Organizations	<i>Population, Migration, and Diaspora</i>	
POLS 4910	Model United Nations	INTL 2240	Global Population and Development
POLS 4918	Model NATO	INTL 2400	Politics of Islam and Gender
POLS 4938	Dialogue of Civilizations: International Politics Abroad	INTL 2300	Religion in International Affairs
<i>Human Rights and Social Justice</i>		AFRS 1185	Gender in the African Diaspora
INTL 2400	Politics of Islam and Gender	AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
INTL 2480	Women and World Politics	ANTH 1101	Peoples and Cultures
or WMNS 2480	Women and World Politics	ANTH 2350	Urban Anthropology
AFAM 2600	Contemporary Issues: Race, Science, and Technology	HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 2373	Gender and Sexuality in World History	PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
LPSC 2302	Global Human Rights: A Social and Economic Perspective	PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions	<i>Development</i>	
PHIL 5001	Global Justice	INTL 2240	Global Population and Development
<i>Conflict and Security</i>		INTL 5200	Political Economy: Interdisciplinary Perspectives
CRIM 4630	Political Crime and Terrorism	ANTH 2305	Global Markets and Local Culture
HIST 1206	Drug Trade and Drug War: History, Security, Culture	ECON 1291	Development Economics
HIST 3330	The Global Cold War	ECON 3404	International Food Economics and Policy
JRNL 3300	Covering Conflicts: Peace, War, and the Media	ENTR 2206	Global Social Enterprise
or INTL 3300	Covering Conflicts: Peace, War, and the Media	ENVR 4515	Sustainable Development
PHIL 5001	Global Justice	INTB 1203	International Business and Global Social Responsibility
POLS 3408	International Security	or INTB 1209	International Business and Global Social Responsibility
POLS 3420	U.S. National Security Policy	PHTH 5230	Global Health
POLS 3430	Revolution, Civil War, and Insurrection	POLS 3487	Politics of Developing Nations
<i>Globalization</i>		<i>Communication and Media</i>	
INTL 2240	Global Population and Development	COMM 2303	Global and Intercultural Communication
INTL 2300	Religion in International Affairs	INTB 3310	Cultural Aspects of International Business
INTL 2480	Women and World Politics	JRNL 3300	Covering Conflicts: Peace, War, and the Media
or WMNS 2480	Women and World Politics	or INTL 3300	Covering Conflicts: Peace, War, and the Media
INTL 3200	Cities in a Global Context	JRNL 5360	Global Reporting
INTL 5200	Political Economy: Interdisciplinary Perspectives	MSCR 2325	Global Media
AFAM 2639	Globalism, Racism, and Human Rights	MUSC 1140	Global Pop Music
ANTH 2305	Global Markets and Local Culture	<i>Senior Seminar/Experiential Learning</i>	
ANTH 2315	Religion and Modernity	INTL 4700	Senior Capstone Seminar in International Affairs
ECON 1290	History of the Global Economy	<i>International Experience in Europe</i>	
ECON 4635	International Economics		
ENGL 2450	Postcolonial Literature		
HIST 2211	The World Since 1945		
HIST 2311	Colonialism/Imperialism		
INTB 3310	Cultural Aspects of International Business		

Complete at least one “international semester” via study abroad, international internship, two Dialogue of Civilizations programs, or international co-op. International students may be exempt from the semester abroad (subject to advisor approval). If they do not complete an international semester, they must participate in either Model European Union or Model NATO.

Foreign Language Requirement

Complete language course work in French, German, Greek, Italian, Portuguese, or Spanish through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

International Affairs Major Credit/GPA Requirement

Complete 60 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives numbered 3000 or above.

Program Requirements

128 total semester hours required

International Affairs with Latin American Studies Concentration, BA

Through this concentrated major, successful undergraduates will develop an awareness of global affairs related to Latin America since the early 20th century through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Note: Students double majoring in international affairs and political science may only count two political science courses toward the international affairs major.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
ANTH 1101	Peoples and Cultures	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
HIST 2211	The World Since 1945	4
INTL 1101	Globalization and International Affairs	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
LACS 1220	Latino, Latin American, and Caribbean Studies	4
POLS 1155	Comparative Politics	4
Latin American Studies Regional Analysis Courses		
Select courses taken during a study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		
Complete four of the following, at least two of which must be numbered 2000 or above:		16
ANTH 4500	Latin American Society and Development	
or INTL 4500	Latin American Society and Development	
CLTR 1505	Introduction to Latin American Culture	
CLTR 1240	Latin American Film	
HIST 1187	Introduction to Latin American History	
LACS 1220	Latino, Latin American, and Caribbean Studies	
LITR 4655	Latin American Literature	
Global Dynamics		
POLS 1160	International Relations	4
Complete one of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		
Environment		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
Law, Diplomacy, and Global Governance		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	

POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
Human Rights and Social Justice	
INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
Conflict and Security	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
Globalization	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
Development	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
Communication and Media	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

Senior Seminar/Experiential Learning

INTL 4700	Senior Capstone Seminar in International Affairs	4
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International Experience in Latin America

Complete at least one “international semester” via study abroad, international internship, two Dialogue of Civilizations programs, or international co-op. International students may be exempt from the semester abroad (subject to advisor approval).

Foreign Language Requirement

Complete language course work in Portuguese or Spanish through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

International Affairs Major Credit/GPA Requirement

Complete 60 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives numbered 3000 or above.

Program Requirement

128 total semester hours required

International Affairs with Middle East Studies Concentration, BA

Through this concentrated major, successful undergraduates will develop an awareness of global affairs related to the Middle East and North Africa since the early 20th century and in the aftermath of the Arab Spring. This is accomplished through diverse and cross-disciplinary theories of interstate relations: conflict, cooperation, hierarchies; civil society, transnational advocacy networks, global social movements; and state-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Note: Students double majoring in international affairs and political science may only count two political science courses toward the international affairs major.

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 1160	Middle East Studies	4
INTL 2718	Research Methods in International Affairs	4
INTL 3400	International Conflict and Negotiation	4
ANTH 1101	Peoples and Cultures	4

POLS 1155	Comparative Politics	4
HIST 2211	The World Since 1945	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	

Middle East Regional Analysis Courses

Select courses taken during a study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.

Complete four of the following, at least two of which must be numbered 2000 or above: ¹

INTL 1150	The Mediterranean World: An Overview	
INTL 1160	Middle East Studies	
INTL 2100	Modern Israel	
INTL 2200	America and the Middle East	
INTL 2400	Politics of Islam and Gender	
INTL 3250	Democracy and Development in North Africa and the Mediterranean	
CLTR 1502	Introduction to Arabic Culture	
ECON 1292	Economic History of the Middle East	
HIST 1185	Introduction to Middle Eastern History	
HIST 1290	Modern Middle East	
POLS 3465	Government and Politics in the Middle East	
POLS 3470	Arab-Israeli Conflict	
POLS 4915	Model Arab League	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 1287	Modern Judaism	

Global Dynamics

POLS 1160	International Relations	
Complete one of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		4

Environment

ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	

POLS 4938	Dialogue of Civilizations: International Politics Abroad
<i>Human Rights and Social Justice</i>	
INTL 2400	Politics of Islam and Gender
INTL 2480 or WMNS 2480	Women and World Politics
HIST 2373	Gender and Sexuality in World History
AFAM 2600	Contemporary Issues: Race, Science, and Technology
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
AFAM 2639	Globalism, Racism, and Human Rights
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480 or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender

INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203 or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

Senior Seminar/Experiential Learning

INTL 4700	Senior Capstone Seminar in International Affairs	4
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International Experience in the Middle East

Complete at least one “international semester” via study abroad, international internship, two Dialogue of Civilizations programs, or international co-op. International students may be exempt from the semester abroad (subject to advisor approval). If they do not complete an international semester, they must either complete a Dialogue of Civilizations program, co-op, or internship or participate in Model United Nations or Model Arab League.

Foreign Language Requirement

Complete language course work in Arabic or Hebrew through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

¹ Middle East Studies (INTL 1160) may not be used as a regional analysis course.

International Affairs Major Credit/GPA Requirement

Complete 60 semester hours in the major with a 2.000 GPA.

Upper-Division Electives

Complete three general electives numbered 3000 or above.

Program Requirement

128 total semester hours required

Environmental Studies and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of the international issues that influence the scientific, cultural, societal, political, and economic aspects of the world's environmental problems and the ways in which such environmental challenges can be ameliorated and/or solved.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
<i>Philosophy</i>		
PHIL 1180	Environmental Ethics	4
<i>Sociology</i>		
SOCL 1246	Environment and Society	4
<i>Political Science</i>		
POLS 2395	Environmental Politics and Policy	4
Science Component		
<i>Biology</i>		
BIOL 1141 or BIOL 1143	Microbes and Society Biology and Society	4
<i>Earth and Environmental Sciences</i>		
Complete one of the following:		4
ENVR 1200	Dynamic Earth	

ENVR 1110	Global Climate Change	
ENVR 1112	Environmental Geology	
<i>Environment</i>		
ENVR 1101	Environmental Science	4
<i>Quantitative Methods</i>		
Complete one of the following:		4-5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
MATH 2280	Statistics and Software	
<i>Planning</i>		
ENVR 5210 or ENVR 5250	Environmental Planning Geology and Land-Use Planning	4

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160 and POLS 1161	International Relations and Recitation for POLS 1160	4
Global Dynamics		
Complete three of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.		12
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	

HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
Conflict and Security	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
Globalization	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
Population, Migration, and Diaspora	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology

HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
Development		
INTL 2240	Global Population and Development	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
ANTH 2305	Global Markets and Local Culture	
ECON 1291	Development Economics	
ECON 3404	International Food Economics and Policy	
ENTR 2206	Global Social Enterprise	
ENVR 4515	Sustainable Development	
INTB 1203	International Business and Global Social Responsibility	
or INTB 1209	International Business and Global Social Responsibility	
PHTH 5230	Global Health	
POLS 3487	Politics of Developing Nations	
Communication and Media		
COMM 2303	Global and Intercultural Communication	
INTB 3310	Cultural Aspects of International Business	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	
or INTL 3300	Covering Conflicts: Peace, War, and the Media	
JRNL 5360	Global Reporting	
MSCR 2325	Global Media	
MUSC 1140	Global Pop Music	
International Experiential Learning		
Complete at least one "international semester" via study abroad, international internship, international co-op, or two short-term programs.		
Regional Analysis Requirement		
Code	Title	Hours
Complete two regional analysis courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		8
Africa		
AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	

HIST 2390	Africa and the World in Early Times
Asia	
ANTH 4350 or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia
Europe	
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union
Latin America	
ANTH 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature
Middle East	
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East

HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Courses

Code	Title	Hours
Integrative Courses		
ECON 3423 or ECON 1290	Environmental Economics History of the Global Economy	4
ENVR 4515	Sustainable Development	4
HIST 2211	The World Since 1945	4
INTL 4700 or ENVS 4997	Senior Capstone Seminar in International Affairs Senior Thesis	4

Environmental Studies and International Affairs Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	ENVR 1200, 1200, or 1110	4	Vacation	0	Vacation	0
ENVR 1101	4	PHIL 1180	4				
INTL 1101	4	POLS 1160 and POLS 1161	4				
SOCL 1246	4	Foreign language course	4				
		16			16		
					0		
						0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
BIOL 1141 or 1143	4	EESC 2000	1	Vacation	0	Co-op	0
HIST 2211	4	POLS 2395	4				
Foreign language course	4	Foreign language course	4				
INAF regional analysis course 1	4	INAF global dynamics course 1	4				
		INAF regional analysis course 2	4				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	International experiential learning	16	Elective	4	Co-op	0
				Quantitative methods course	4-5		
	0		16		8-9		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ECON 3423 or 1290	4	Elective	4	Co-op	0
		ENGW 3308 or 3315	4	Elective	4		
		ENVR 5210 or 5250	4				
		INTL 3400	4				
		INAF global dynamics course 2	4				
	0		20		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	ENVR 4515	4
		INTL 4700 or ENV5 4997	4
		ENVR undergraduate elective	4
		INAF global dynamics course 3	4
	0		16

Total Hours: 133-134

Human Services and International Affairs, BA

The combined human services and international affairs degree offers students an understanding of geopolitical realities paired with the practical skills and theory necessary to work in social services and

nongovernment organizations (NGOs) impacted by global issues. Students will have the opportunity to prepare for practice in international NGOs through co-ops and Dialogue of Civilization programs. This combined major will prepare students for positions within the nonprofit sector with an international focus.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Research Methods		
HUSV 3700	Research Methods for Human Services	4
Policy		
HUSV 3900	Introduction to Social Policy	4
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Internship		
HUSV 4994	Human Services Internship	6
Human Services Electives		
Complete two HUSV courses.		8

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4

POLS 1160	International Relations	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
or HIST 2211	The World Since 1945	

Global Dynamics

Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements. 8

Environment

ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHIL 1272	Ethics in the World's Religions	
PHIL 5001	Global Justice	

Conflict and Security

CRIM 4630	Political Crime and Terrorism	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 3330	The Global Cold War	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	
or INTL 3300	Covering Conflicts: Peace, War, and the Media	
PHIL 5001	Global Justice	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3430	Revolution, Civil War, and Insurrection	

Globalization

INTL 2240	Global Population and Development	
INTL 2300	Religion in International Affairs	
INTL 2480	Women and World Politics	

or WMNS 2480	Women and World Politics	
INTL 3200	Cities in a Global Context	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
AFAM 2639	Globalism, Racism, and Human Rights	
ANTH 2305	Global Markets and Local Culture	
ANTH 2315	Religion and Modernity	
ECON 1290	History of the Global Economy	
ECON 4635	International Economics	
ENGL 2450	Postcolonial Literature	
HIST 2211	The World Since 1945	
HIST 2311	Colonialism/Imperialism	
INTB 3310	Cultural Aspects of International Business	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
SOCL 3465	Globalization and the Evolution of Human Societies	

Population, Migration, and Diaspora

INTL 2240	Global Population and Development	
INTL 2400	Politics of Islam and Gender	
INTL 3200	Cities in a Global Context	
AFRS 1185	Gender in the African Diaspora	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
ANTH 1101	Peoples and Cultures	
ANTH 2350	Urban Anthropology	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	

Development

INTL 2240	Global Population and Development	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
ANTH 2305	Global Markets and Local Culture	
ECON 1291	Development Economics	
ECON 3404	International Food Economics and Policy	
ENTR 2206	Global Social Enterprise	
ENVR 4515	Sustainable Development	
INTB 1203	International Business and Global Social Responsibility	
or INTB 1209	International Business and Global Social Responsibility	
PHTH 5230	Global Health	
POLS 3487	Politics of Developing Nations	

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
		12

Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism

PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia
Europe	
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. Note: Completing this requirement satisfies the language requirement for the BA degree.

Human Services/International Affairs Integrative Courses

Complete Senior Seminar in Human Services (HUSV 4700) or Senior Capstone Seminar in International Affairs (INTL 4700) or both. Note, however, that students wishing to take HUSV 4700 but not INTL 4700 must meet with an INTL advisor to obtain approval for a substitute INTL course. Similarly, students wishing to take INTL 4700 but not HUSV 4700 must meet with an HUSV advisor to obtain approval for a substitute HUSV course. Substitute courses (HUSV or INTL) must be upper-division courses and must relate to the combined major.

Code	Title	Hours
Human Services		
HUSV 4700	Senior Seminar in Human Services	4
International Affairs		
INTL 4700	Senior Capstone Seminar in International Affairs	4

Human Services and International Affairs Combined-Major Credit Requirement

Complete 90 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Elective	4	Vacation	0	Vacation	0
INTL 1000	1	Foreign language core course	4				
INTL 1101	4	HUSV 2300	4				
HUSV 1101	4	ECON 1290	4				
HSVC elective	4						
		17			16		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	HUSV 3700	4				
INTL elective	4	HUSV 3900	4				
HSVC elective	4	EXED 2000	1				
		16			17		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		16			17		

	HSVC organization course	4					
	HSVC elective	4					
		0			16		
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Elective	4	Co-op	0
		0			16		
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4				
		0			18		

Total Hours: 132

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Elective	4	Vacation	0	Vacation	0
INTL 1000	1	Foreign language core course	4				
INTL 1101	4	HUSV 2300	4				
HUSV 1101	4	ECON 1290	4				
HSVC elective	4						
		17			16		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
Foreign language core course	4					INTL elective	4
HSVC elective	4						
HUSV 3900	4						
EXED 2000	1						
		17			0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
INTL elective	4					INTL elective	4
HUSV 3700	4						
HSVC elective	4						
		16			0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
INTL elective	4						
HUSV 4994	6						
	18		0		0		0

Year 5

Fall	Hours	Spring	Hours
HSVC organization course	4	INTL elective	4
HSVC policy course	4	Elective	4
Elective	4	HUSV 4700	4
INTL elective	4	INTL 4700	4
	16		16

Total Hours: 132

International Affairs and Cultural Anthropology, BA

Through this combined major, successful undergraduates will develop an awareness of contemporary cultures within their international, transnational, and global contexts since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social movements; and state-society relations (democracy, authoritarianism, social justice and inequalities, citizenship).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International

Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
ECON 1115	Principles of Macroeconomics	4
or HIST 2211	The World Since 1945	
Global Dynamics		
	Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:	8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHIL 1272	Ethics in the World's Religions	
PHIL 5001	Global Justice	
<i>Conflict and Security</i>		
CRIM 4630	Political Crime and Terrorism	
HIST 1206	Drug Trade and Drug War. History, Security, Culture	
HIST 3330	The Global Cold War	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	
or INTL 3300	Covering Conflicts: Peace, War, and the Media	
PHIL 5001	Global Justice	
POLS 3408	International Security	

POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development

INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
Complete two regional analysis courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:		8

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture

HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture

PHIL 1287	Modern Judaism
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Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4

Anthropology Electives

Complete three courses in the following range, one of which must be numbered 4000 or above. One study-abroad course may also count toward this requirement with prior permission from the department:

ANTH 2300 to ANTH 4999

Advanced Area Courses

Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Integrative Requirements

Code	Title	Hours
Global Markets		
ANTH 2305	Global Markets and Local Culture	4
Capstone		
ANTH 4600	Senior Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

Students taking Senior Seminar (ANTH 4600) must complete either a one-semester senior project, which they would do in the context of ANTH 4600, or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

International Affairs and Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

International Affairs and Economics, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international economic issues since the early 20th century through diverse and cross-disciplinary theories of economic development and growth; states, societies, and markets (the intersection of politics and economics); and the role of states, civil societies, and social movements in crafting or addressing economic strategies, inequalities, and citizenship rights.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
International Affairs/Economics at Northeastern		
INTL 1000 or ECON 1000	International Affairs at Northeastern Economics at Northeastern	1
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
ANTH 1101 or HIST 2211	Peoples and Cultures The World Since 1945	4
Global Dynamics		
Complete three of the following with one course numbered 2000 or above. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:		12
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	

Law, Diplomacy, and Global Governance

INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice

Conflict and Security

CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300 or INTL 3300	Covering Conflicts: Peace, War, and the Media Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection

Globalization

INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480 or WMNS 2480	Women and World Politics Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism

INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
	Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:	12

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust

HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Economics Requirements

Code	Title	Hours
Required Economics Courses		
Grades in the following courses must average a minimum of 2.000 with no grade lower than C-.		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4

ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 3520	History of Economic Thought	4

Economics Electives

Code	Title	Hours
Complete three economics electives with a minimum of one numbered 3000 or above. Courses used to satisfy international affairs requirements may not be used as economics electives.		12

Supporting Courses

Code	Title	Hours
Calculus		
MATH 1231	Calculus for Business and Economics	4
Computer Science		
CS 1100	Computer Science and Its Applications	4

Integrative Requirements

Code	Title	Hours
Development Economics		
ECON 1291	Development Economics	4
Senior Seminar		
Complete one of the following with a thesis or project that integrates both international affairs and economics:		
ECON 4692	Senior Economics Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

International Affairs and Economics Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1231	4	Vacation	0	Vacation	0
INTL 1101	4	ECON 1116	4				
ECON 1115	4	POLS 1160	4				
ENGW 1111	4	POLS 1161	0				
Foreign language core course	4	HIST 2211	4				
		17			16		
					0		
						0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 3520	4	ECON 2350	4	Vacation	0	Co-op	0
CS 1100	4	INTL elective	4				
INTL elective	4	Foreign language core course	4				

Foreign language core course	4	ECON 2316	4			
	16		16	0		0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	INTL 3400	4	INTL elective	4	Co-op
		ECON 2315	4	INTL elective	4	
		Elective	4			
		Elective	4			
	0		16	8		0
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	ECON undergraduate elective	4	Elective	4	Co-op
		ECON undergraduate elective	4	Elective	4	
		INTL elective	4			
		Elective	4			
	0		16	8		0
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	ECON undergraduate elective	4			
		INTL 4700	4			
		Elective	4			
		Elective	4			
	0		16			

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
INTL 1000	1	MATH 1231	4	Vacation	0	Vacation
INTL 1101	4	ECON 1116	4			
ECON 1115	4	POLS 1160	4			
ENGW 1111	4	POLS 1161	0			
Foreign language core course	4	HIST 2211	4			
	17		16	0		0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ECON 3520	4	Co-op	0	Co-op	0	INTL elective
CS 1100	4					INTL elective
INTL elective	4					
Foreign language core course	4					
	16		0	0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 2350	4	Co-op	0	Co-op	0	Elective	4
INTL elective	4					Elective	4
Foreign language core course	4						
ECON 2316	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
ECON 2315	4						
Elective	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
ECON undergraduate elective	4	ECON undergraduate elective	4
ECON undergraduate elective	4	INTL 4700	4
INTL elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

International Affairs and Religious Studies, BA

Through this combined major, successful undergraduates will develop an awareness of the interaction of religious views with institutions and cultures in national and international contexts since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social/religious movements; state-society relations (religion, democracy, authoritarianism, social justice and ethics, citizenship); comparative study of religious theology and praxis; and knowledge of particular religious traditions, including Buddhism, Christianity, Hinduism, Islam, and Judaism.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
Complete one of the following:		4
POLS 1155	Comparative Politics	
ECON 1115	Principles of Macroeconomics	
HIST 2211	The World Since 1945	
INTL 2300	Religion in International Affairs	
Global Dynamics		
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:		8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	

LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804

PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
	Complete two of the following, both of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:	8

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East

HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Religious Studies Requirements

Code	Title	Hours
Comparative Religion		
Complete two of the following:		8
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 4390	Cults and Sects	
Ancient Mediterranean and African World Traditions		
Complete one of the following:		4
JWSS 1285	Jewish Religion and Culture	
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2314	Biblical Prophets and Their Interpreters	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2316	Interpreting the Bible	
PHIL 3410	Religion and Spirituality in the African Diaspora	

PHIL 4390	Cults and Sects	
Asian Traditions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 4393	Asian Religions in the United States	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2398	Religion and Culture in Indian Cinema	
PHIL 2395	Japanese Buddhism	
PHIL 2394	Chinese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Religion and Culture		
Complete one of the following:		4
JWSS 1285	Jewish Religion and Culture	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1285	Jewish Religion and Culture	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2316	Interpreting the Bible	
PHIL 4390	Cults and Sects	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
Ethics		
Complete one of the following:		4
PHIL 1130	Ethics: East and West	
PHIL 1272	Ethics in the World's Religions	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 5001	Global Justice	
Religious Studies Electives		
Complete three of the following, two of which must be numbered above 2000:		12
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	

PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

International Affairs and Religious Studies Integrative Requirement

Code	Title	Hours
Capstone		
INTL 4700	Senior Capstone Seminar in International Affairs	4

International Affairs and Religious Studies Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Political Science and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international relations since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social movements; political processes, institutions, and actors; and state-society relations (democracy, authoritarianism, inequalities, citizenship).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Theory		
Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Electives/Concentration for BA

Complete four upper-division political science electives, or complete one of the following concentrations. If you are working toward a concentration, declare it with your advisor in order for it to be added to your record. Requirements for the concentrations are listed below (p. 803).

Code	Title	Hours
Political Science Electives		
Complete four political science courses at or above POLS 2300.		16
<ul style="list-style-type: none"> • Concentration in Campaigns and Elections (p. 803) • Concentration in Comparative Politics (p. 803) • Concentration in Identity, Culture, and Politics (p. 803) • Concentration in International Relations and Diplomacy (p. 803) • Concentration in Security Studies (p. 804) 		

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
HIST 2211	The World Since 1945	4
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
Global Dynamics		
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements. One course must be numbered 2000 or above:		8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	

LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804

PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:		12

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East

HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Requirements

Code	Title	Hours
Capstone		
Complete one of the following:		4
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	
INTL 4700	Senior Capstone Seminar in International Affairs	

Political Science and International Affairs Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	

POLS 3402
POLS 3304

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
ENGW 1111	4	HIST 2211	4	Vacation	0
MATH 1215	4	POLS 1150	4		
POLS 1155	4	POLS 1151	0		
POLS 1156	0	Foreign language core course	4		
INTL 1101	4	POLS 1160	4		
POLS 1000	1	POLS 1161	0		
	17		16	0	0

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
ECON 1290	4	INTL undergraduate elective	4	Vacation	0
POLS 2326	4	POLS 2400	4		
POLS undergraduate elective	4	POLS undergraduate elective	4		
Foreign language core course	4	Foreign language core course	4		
	16		16	0	0

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	INTL 3400	4	INTL undergraduate elective	4
		POLS undergraduate elective	4	POLS undergraduate elective	4

	INTL undergraduate elective	4		
	ENGW 3315	4		
	0	16	8	0

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	INTL undergraduate elective	4	Elective	4
		INTL undergraduate elective	4	Elective	4
		POLS undergraduate elective	4		
		Elective	4		
	0	16	8	0	0

Year 5					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	INTL 4700	4		
		Elective	4		
		Elective	4		
		Elective	4		
	0	16			

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
ENGW 1111	4	HIST 2211	4	Vacation	0
MATH 1215	4	Foreign language core course	4		
POLS 1155	4	POLS 1150	4		
POLS 1156	0	POLS 1151	0		
INTL 1101	4	POLS 1160	4		
POLS 1000	1	POLS 1161	0		
	17		16	0	0

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
ECON 1290	4	Co-op	0	Co-op	0
POLS 2326	4				
Foreign language core course	4				
POLS undergraduate elective	4				
	16		0	0	8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL undergraduate elective	4	Co-op	0	Co-op	0	INTL undergraduate elective	4
POLS 2400	4					POLS undergraduate elective	4
POLS undergraduate elective	4						
Foreign language core course	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
POLS undergraduate elective	4						
INTL undergraduate elective	4						
ENGW 3315	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
INTL undergraduate elective	4	INTL 4700	4
POLS undergraduate elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

Sociology and International Affairs, BA**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Sociology Requirements

Code	Title	Hours
Sociology Required Courses		
ANTH 2305	Global Markets and Local Culture	4
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
Sociology Electives A		
Complete two courses in the following range:		8
SOCL 1000 to SOCL 2999		
Sociology Electives B		
Complete two courses in the following range:		8
SOCL 3000 to SOCL 5999		
Capstone Requirement		
SOCL 4600	Senior Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
ECON 1115	Principles of Macroeconomics	4
or HIST 2211	The World Since 1945	
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1155	Comparative Politics	4
Global Dynamics		
POLS 1160	International Relations	4
Global Dynamics Elective 1		
Complete one of the following courses:		4
INTL 2240	Global Population and Development	
INTL 2480	Women and World Politics	
INTL 2300	Religion in International Affairs	
POLS 3418	Nationalism	
PHIL 5001	Global Justice	
Global Dynamics Elective 2		
Complete one of the following courses:		4
INTL 2240	Global Population and Development	
INTL 2300	Religion in International Affairs	
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	

or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2600	Contemporary Issues: Race, Science, and Technology
AFAM 2639	Globalism, Racism, and Human Rights
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ANTH 2350	Urban Anthropology
COMM 2303	Global and Intercultural Communication
MSCR 2325	Global Media
CRIM 4630	Political Crime and Terrorism
ECON 1290	History of the Global Economy
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
ENTR 2206	Global Social Enterprise
ENTR 3306	Global Entrepreneurship
ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 2211	The World Since 1945
HIST 2214	War in the Modern World
HIST 2311	Colonialism/Imperialism
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
LPSC 2302	Global Human Rights: A Social and Economic Perspective
MUSC 1140	Global Pop Music
PHIL 5001	Global Justice
PHTH 5230	Global Health
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
POLS 3487	Politics of Developing Nations

POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
SOCL 1246	Environment and Society

International Experiential Learning

Complete at least one "international semester" via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
Complete two of the following courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		8

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism

PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia
Europe	
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union
Latin America	
ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature
Middle East	
INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Requirements

Code	Title	Hours
SOCL 3465	Globalization and the Evolution of Human Societies	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Sociology and International Affairs Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Spanish and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international issues since the 19th century through diverse and cross-disciplinary theories of: (1) Interstate relations: conflict, cooperation, hierarchies; (2) Civil society, transnational advocacy networks, global social movements; and (3) the politics of culture, linguistic and cultural diversity, religious and ideological divides; (4) State-society relations: democracy, authoritarianism, inequalities, citizenship.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Spanish Language Requirements

Code	Title	Hours
Spanish Language Requirements		
SPNS 2101	Intermediate Spanish 1	
SPNS 2102	Intermediate Spanish 2	
SPNS 3101	Advanced Spanish 1	

Spanish Culture

CLTR 1120	Introduction to Languages, Literature, and Culture	4
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Spanish Literature

Complete one of the following courses in the language of your major: 4

LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century

LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century

Advanced Spanish Language

Complete two of the following courses in the appropriate language while on study abroad: 8

SPNS 2101 to SPNS 5999

LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century

LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century

LITR 4655 Latin American Literature

Spanish Language Electives

Complete three of the following courses in the language of your major with course numbers 2990 or above: 12

SPNS 2990 to SPNS 3990

LITR 4560 Masterpieces of Spanish Literature: 18th–20th Century

LITR 4561 Masterpieces of Spanish Literature: 12th–17th Century

LITR 4655 Latin American Literature

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
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Required Courses

INTL 1101	Globalization and International Affairs	4
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INTL 3400	International Conflict and Negotiation	4
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ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	

Global Dynamics

Complete three of the following courses. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements.

Environment

ENVR 1110	Global Climate Change
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ENVR 4515	Sustainable Development
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SOCL 1246	Environment and Society
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Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics
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or WMNS 2480	Women and World Politics
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INTL 5200	Political Economy: Interdisciplinary Perspectives
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COMM 2303	Global and Intercultural Communication
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POLS 1155	Comparative Politics
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POLS 1160	International Relations
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POLS 2370	Religion and Politics
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POLS 3405	International Political Economy
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POLS 3406	International Law
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POLS 3407	International Organizations
-----------	-----------------------------

POLS 4910	Model United Nations
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POLS 4918	Model NATO
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POLS 4938	Dialogue of Civilizations: International Politics Abroad
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Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
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INTL 2480	Women and World Politics
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or INTL 2480	Women and World Politics
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AFAM 2600	Contemporary Issues: Race, Science, and Technology
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HIST 2373	Gender and Sexuality in World History
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LPSC 2302	Global Human Rights: A Social and Economic Perspective
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PHIL 1272	Ethics in the World's Religions
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PHIL 5001	Global Justice
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Conflict and Security

CRIM 4630	Political Crime and Terrorism
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HIST 1206	Drug Trade and Drug War: History, Security, Culture
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HIST 3330	The Global Cold War
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JRNL 3300	Covering Conflicts: Peace, War, and the Media
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or INTL 3300	Covering Conflicts: Peace, War, and the Media
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PHIL 5001	Global Justice
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POLS 3408	International Security
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POLS 3430	Revolution, Civil War, and Insurrection
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POLS 3420	U.S. National Security Policy	4
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Globalization

INTL 2240	Global Population and Development
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INTL 2300	Religion in International Affairs
-----------	-----------------------------------

INTL 2480	Women and World Politics
-----------	--------------------------

or WMNS 2480	Women and World Politics
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INTL 3200	Cities in a Global Context
-----------	----------------------------

INTL 5200	Political Economy: Interdisciplinary Perspectives
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AFAM 2639	Globalism, Racism, and Human Rights
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ANTH 2305	Global Markets and Local Culture
-----------	----------------------------------

ANTH 2315	Religion and Modernity
-----------	------------------------

ECON 1290	History of the Global Economy
-----------	-------------------------------

ECON 4635	International Economics
-----------	-------------------------

ENGL 2450	Postcolonial Literature
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HIST 2211	The World Since 1945
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HIST 2311	Colonialism/Imperialism
-----------	-------------------------

INTB 3310	Cultural Aspects of International Business
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LPSC 2302	Global Human Rights: A Social and Economic Perspective
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POLS 1160	International Relations
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POLS 2370	Religion and Politics
-----------	-----------------------

POLS 3405	International Political Economy
-----------	---------------------------------

POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Complete three of the following courses, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:

Code	Title	Hours
Africa		
AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	
Asia		
ANTH 4350	Ethnography of Southeast Asia	
or INTL 4350	Ethnography of Southeast Asia	
ASNS 1150	East Asian Studies	
or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Europe		
CLTR 1501	Introduction to French Culture	
CLTR 1503	Introduction to Italian Culture	
CLTR 1504	Introduction to Spanish Culture	
ECON 1293	European Economic History	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2370	Renaissance to Enlightenment	
HIST 2376	Britain and the British Empire	
HIST 4946	Independent Field Research Abroad: Central Europe	
POLS 3435	Politics and Governance of Europe and the European Union	
Latin America		
ANTH 4500	Latin American Society and Development	
or INTL 4500	Latin American Society and Development	

CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

Integrative Courses

Code	Title	Hours
Capstone		
LITR 3500	International Perspectives	4
INTL 4700	Senior Capstone Seminar in International Affairs	4

Spanish and International Affairs Combined-Major Credit/GPA Requirements

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
ENGW 1111	4	ECON 1115 or 1116	4				
INTL 1101	4	Elective	4				
CLTR 1120	4	SPNS 2102	4				

SPNS 2101	4						
	17		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL elective	4	INTL elective	4	Vacation	0	Co-op	0
Elective	4	Elective	4				
Elective	4	Spanish elective 3000-5000	4				
SPNS 3101	4						
	16		12		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL elective	4	INTL elective	4	Co-op	0
		INTL elective	4	Upper division elective	4		
		Advanced literature/cultural course	4				
		Advanced literature/cultural course	4				
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Upper division elective	4	Co-op	0
		INTL 3400	4	INTL elective	4		
		Elective	4				
		Spanish elective 3000-5000	4				
	0		16		8		0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL 4700	4				
		Upper division elective	4				
		LITR 3500	4				
		Spanish elective 3000-5000	4				
	0		16				

Total Hours: 125

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 1000	1	MATH 1215	4	Vacation	0	Vacation	0
ENGW 1111	4	ECON 1115 or 1116	4				

INTL 1101	4	Elective	4			
CLTR 1120	4	SPNS 2202	4			
SPNS 2101	4					
	17		16	0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	INTL elective	4
Spanish elective 3000-5000	4					Elective	4
SPNS 3101	4						
	12		0	0			8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL elective	4	Co-op	0	Co-op	0	INTL elective	4
INTL elective	4					Upper division elective	4
Advanced literature/cultural course	4						
Advanced literature/cultural course	4						
	16		0	0			8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
ENGW 3315	4						
Elective	4						
Spanish elective 3000-5000	4						
	16		0	0			0

Year 5

Fall	Hours	Spring	Hours
INTL elective	4	INTL elective	4
Upper division elective	4	INTL 4700	4
Elective	4	Upper division elective	4
Spanish elective 3000-5000	4	LITR 3500	4
	16		16

Total Hours: 125

International Affairs, Minor

The minor in international affairs is an interdisciplinary program that exposes students to a variety of different perspectives on the field, while providing the flexibility to select the courses in the disciplines that

interest them most. The minor provides an international lens to students' primary degree, preparing them for our globalized world and workplaces.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Course

Code	Title	Hours
INTL 1101	Globalization and International Affairs	4

Regional Analysis Elective Courses

Complete two of the following. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor.

Code	Title	Hours
AFRS 2307	Africa Today	
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	

Asia

ANTH 4350	Ethnography of Southeast Asia	
or INTL 4350	Ethnography of Southeast Asia	
ASNS 1150	East Asian Studies	
or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	

Europe

CLTR 1501	Introduction to French Culture	
CLTR 1503	Introduction to Italian Culture	

CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

Global Dynamics Elective Courses

Code	Title	Hours
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on minor requirements:		

Environment

ENVR 1110	Global Climate Change	8
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ENVR 4515	Sustainable Development
SOCL 1246	Environment and Society

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 5200	Political Economy: Interdisciplinary Perspectives
COMM 2303	Global and Intercultural Communication
POLS 1155	Comparative Politics
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice

Conflict and Security

CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3430	Revolution, Civil War, and Insurrection
POLS 3420	U.S. National Security Policy

Globalization

INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature

HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies

Population, Migration, and Diaspora

INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam

Development

INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

GPA Requirement

2.000 GPA required in the minor

Middle East Studies, Minor

The minor in Middle East studies is an inter- and cross-disciplinary program, drawing on courses from within the International Affairs Program as well as departments and units across the college. The program provides an in-depth study of the Middle East and North Africa (Arab world, Israel, Iran, and Turkey); its place within the broader Mediterranean region; and its relations with other world regions. As such, it seeks to enhance students' understanding of this culturally diverse and politically important region of the world. Students are encouraged to take advantage of the university's study-abroad and Dialogue of Civilizations programs (faculty-led summer programs) in Egypt, Morocco, Tunisia, Jordan, Turkey, Israel and Palestine, and other approved programs in the region.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
POLS 3465	Government and Politics in the Middle East	4
or POLS 3470	Arab-Israeli Conflict	
or INTL 3250	Democracy and Development in North Africa and the Mediterranean	
INTL 1160	Middle East Studies	4
or HIST 1290	Modern Middle East	
INTL 1150	The Mediterranean World: An Overview	4

Elective Courses

Elective courses may include courses taken as part of an approved study-abroad program. *Note: Courses used as required courses (above) may not be used as elective courses.*

Code	Title	Hours
Complete two of the following:		
ARAB 1301	Elementary Arabic Immersion 1	8
ARAB 1302	Elementary Arabic Immersion 2	
ARAB 2301	Intermediate Arabic Immersion 1	
ARAB 2302	Intermediate Arabic Immersion 2	
ARAB 3301	Advanced Arabic Immersion 1	
ARAB 3302	Advanced Arabic Immersion 2	
CLTR 1502	Introduction to Arabic Culture	
ECON 1292	Economic History of the Middle East	
HIST 1185	Introduction to Middle Eastern History	
HIST 1290	Modern Middle East	
INTL 2100	Modern Israel	
INTL 2200	America and the Middle East	
INTL 2400	Politics of Islam and Gender	
INTL 3250	Democracy and Development in North Africa and the Mediterranean	
POLS 3465	Government and Politics in the Middle East	

POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

GPA Requirement

2.000 GPA required in the minor

Jewish Studies

Website (<http://www.northeastern.edu/jewishstudies>)

Lori H. Lefkowitz, PhD

Ruderman Professor and Director, Jewish Studies Program

450 Renaissance Park
617.373.8437
617.373.2942 (fax)

Jewish studies offers the opportunity to explore Jewish history, religion, and cultures. Because of the geographic, ethnic, racial, and cultural diversity of the Jewish people, as well as the long timeline of Jewish history, Jewish studies provides students with rich possibilities for cross-cultural and comparative study. Jewish studies is an interdisciplinary program embracing history, music, literature, political science, international affairs, sociology, gender studies, religion, philosophy, Hebrew, and more. The program also explores the evolving interactions between Judaism and other religions and offers exciting courses in both Israel studies and the history and cultures of Diaspora Jewish communities around the world.

The Jewish studies program offers both a minor and a preapproved template for a combined major. A unique feature of the minor is the Jewish studies module, in which students create an original project that brings an aspect of Jewish studies together with an aspect of their major field.

Jewish studies classes seek to help students develop a more critical and analytical understanding of the religious and secular world around them. They are designed to prepare students for any field that requires critical thinking and cross-cultural understanding, including careers in education, social services, politics, museums and archives, and Jewish communal organizations, as well as for graduate and professional studies.

Study abroad, either through the Dialogues of Civilization program in Israel, Germany, and/or Poland or through traditional study-abroad programs, is a significant aspect of Jewish studies. Experiential learning in the Jewish studies program includes these study-abroad opportunities, as well as internships or co-ops at organizations such as the Jewish Community Relations Council, Facing History and Ourselves, the Jewish Women's Archive, and the Israeli Consulate. The Ruderman merit-based scholarship supports selected Jewish studies majors and minors; the Gideon Klein award supports a student in research on the arts and the Holocaust.

For more information, visit the department website (<http://www.northeastern.edu/jewishstudies>).

Academic Progression Standards

Same as university-wide standards described under "Academic Status (p. 31)."

Pre-approved Template Program in Jewish Studies

Jewish studies offers a preapproved template program that may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<http://www.northeastern.edu/registrar/major-2.html>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the myNortheastern web portal (<http://www.myneu.neu.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

Programs

Bachelor of Arts

- Jewish Studies and Religion (p. 814)

Minor

- Jewish Studies (p. 818)

Jewish Studies and Religion, BA

The combined major in Jewish studies and religion offers students an integrated program of study of two naturally complementary fields. Study of Judaism as a religion is greatly enhanced by broad familiarity with the world's religious traditions; conversely, in-depth knowledge of Jewish history, identity, and cultures provides students of religion with valuable insight into the ways in which religion interacts with a wide variety of forces to shape the experiences of the adherents of a particular faith. The combined major is designed to enable students to understand the history, cultures, and religion of the Jewish people; analyze and apply theoretical understanding to the interaction between religious, social, and historical factors that have shaped the experiences of the Jewish people; and demonstrate fluency in understanding the major religious traditions of the world. The combined major in Jewish studies and religion is designed to prepare students for graduate work in Jewish studies, religion, or many of the other disciplines that make up Jewish studies or for work within the Jewish community or in communal organizations associated with other religions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Jewish Studies Requirements

Code	Title	Hours
Required Courses		
PHIL 1285 or JWSS 1285	Jewish Religion and Culture	4
JWSS 4660	Jewish Studies Module	1
Jewish Religion and Thought		
Complete one course from list A or list B.		4
Note: If you complete one course from list B, you will be required to complete one fewer course to satisfy the religious studies electives requirement.		
<i>List A</i>		
PHIL 1287	Modern Judaism	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews	
PHIL 2322	Responses to the Holocaust	
<i>List B</i>		
PHIL 1286	American Judaism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought	
Israel Studies		
Complete one of the following:		4
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
INTL 2100	Modern Israel	
POLS 3470	Arab-Israeli Conflict	
Jewish History		
Complete one of the following:		4
HIST 1294 or JWSS 1294	Strangers in a Strange Land? European Jewish History 1750–1945	
HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2282	The Holocaust and Comparative Genocide	
HIST 2285 or JWSS 2285	America and the Holocaust	
HIST 2431 or JWSS 2431	Immigration and Identity in the American Jewish Experience	
Jewish Art and Culture		
Complete one of the following:		4
CLTR 3450	Israeli and Palestinian Film	

ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL 3678 or JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 3685 or JWSS 3685	Modern and Contemporary Jewish Literature	
Jewish Studies Electives		
Complete three of the following:		12
CLTR 3450	Israeli and Palestinian Film	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL 3678 or JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 3685 or JWSS 3685	Modern and Contemporary Jewish Literature	
HIST 1294 or JWSS 1294	Strangers in a Strange Land? European Jewish History 1750–1945	
HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2282	The Holocaust and Comparative Genocide	
HIST 2285 or JWSS 2285	America and the Holocaust	
HIST 2431 or JWSS 2431	Immigration and Identity in the American Jewish Experience	
INTL 2100	Modern Israel	
JWSS 4992	Directed Study	
PHIL 1120	Understanding the Bible	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1286	American Judaism	
PHIL 1287	Modern Judaism	
PHIL 2300	Mysticism	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2322	Responses to the Holocaust	
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought	
PHIL 4546	Advanced Biblical Studies: Hebrew Bible	
POLS 2370	Religion and Politics	

POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
SOCL 1241	Sociology of Violence
SOCL 2270	Race and Ethnic Relations

Religion Requirements

Code	Title	Hours
Required Course		
PHIL 1120	Understanding the Bible	4
Religion		
Complete two of the following:		8
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 2325	Ancient Philosophy and Political Thought	
Comparative Religions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1230	Sound, Music, and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
Philosophy or Religion Seminar		
Complete one of the following:		4
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 5001	Global Justice	
PHIL 4903	Seminar in Religion	
Religious Studies Electives		
Complete four of the following:		16
PHIL 1110	Introduction to Religion	
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1120	Understanding the Bible	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	

or JWSS 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4994	Internship

Integrative Requirements

Code	Title	Hours
Note: This course may also count as a religion seminar or as a Jewish history course.		
Complete one of the following:		4
HIST 1294	Strangers in a Strange Land? European Jewish History 1750–1945	
or JWSS 1294	Strangers in a Strange Land? European Jewish History 1750–1945	
HIST 2431	Immigration and Identity in the American Jewish Experience	
or JWSS 2431	Immigration and Identity in the American Jewish Experience	
PHIL 4547	Seminar: Apocalypticism	

Hebrew Language Introduction

Complete two courses in Hebrew. These courses also count toward the BA language requirement. 8

Jewish Studies and Religion Major Credit Requirement

80 major semester hours required

Program Requirement

128 total semester hours required

Plan of Study Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Foreign language core course	4	Vacation	0	Vacation	0
Elective	4	HIST 2282	4				
PHIL 1285 or JWSS 1285	4	Elective	4				
Foreign language core course	4	Elective	4				
		16	16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL 2314	4	HBRW 1102	4	Vacation	0	Co-op	0
PHIL 1275	4	Religious studies elective	4				
HBRW 1101	4	Foreign language core course	4				
Religious studies elective	4	Elective	4				
		16	16		0		0

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HIST 1294	4	Elective	4	Co-op	0
		ENGW 3315	4	Elective	4		
		Jewish studies elective	4				
		HIST 2280	4				
		0	16		8		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MUSC 1132	4	Elective	4	Co-op	0
		Jewish studies elective	4	Elective	4		
		Religious studies elective	4				
		PHIL 2300	4				
		0	16		8		0

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	Jewish studies elective	4
		PHIL 4390	4
		Religious studies elective	4

Religion seminar	4
<hr/>	
0	16

Total Hours: 128

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	PHIL 1150	4	Vacation	0	Vacation	0
Elective	4	Elective	4				
PHIL 1285 or JWSS 1285	4	HIST 2282	4				
Foreign language core course	4	Religious studies elective	4				
		16	16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HBRW 1101	4	Co-op	0	Co-op	0	Foreign language core course	4
PHIL 1275	4					Elective	4
PHIL 2300	4						
PHIL 2314	4						
		16	0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Elective	4
HBRW 1102	4					Elective	4
Religious studies elective	4						
Foreign language core course	4						
		16	0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Jewish studies elective	4	Co-op	0	Co-op	0	Vacation	0
Jewish studies elective	4						
Religious studies elective	4						
Elective	4						
		16	0		0		0

Year 5			
Fall	Hours	Spring	Hours
Jewish studies elective	4	HIST 1294	4
Religious studies elective	4	HIST 2280	4

Religious seminar	4 MUSC 1132	4
Elective	4 PHIL 1280	4
		16
		16

Total Hours: 128

Jewish Studies, Minor

The Jewish studies minor provides an excellent broad-based introduction to the history, religion, and cultures of the Jewish people while also offering a unique opportunity to bring students' major fields of study to bear on Jewish studies topics. In our innovative 1-credit capstone Jewish studies module, minors integrate their work in Jewish studies into their major field—for example, bringing together Jewish studies and psychology through a service-learning project with Gateways, a nonprofit that offers Jewish educational resources for children with special needs, or combining Jewish studies and history through a research project on the role of Jewish women in the women's health movement.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
PHIL 1285 or JWSS 1285	Jewish Religion and Culture	4
JWSS 4660	Jewish Studies Module	1

Elective Courses

Code	Title	Hours
		16

Complete four courses from the following lists. A maximum of two courses may be taken from the Jewish-studies-related course list:

Jewish Studies Courses

CLTR 3450	Israeli and Palestinian Film
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL 3678 or JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 3685 or JWSS 3685	Modern and Contemporary Jewish Literature
HBRW 1101	Elementary Hebrew 1
HBRW 1102	Elementary Hebrew 2
HIST 1294 or JWSS 1294	Strangers in a Strange Land? European Jewish History 1750–1945
HIST 2282	The Holocaust and Comparative Genocide
HIST 2285 or JWSS 2285	America and the Holocaust

HIST 2431 or JWSS 2431	Immigration and Identity in the American Jewish Experience
INTL 2100	Modern Israel
JWSS 4660	Jewish Studies Module
JWSS 4992	Directed Study
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2322	Responses to the Holocaust
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
POLS 3470	Arab-Israeli Conflict

Jewish-Studies-Related Courses

HIST 2280	Hitler, Germany, and the Holocaust
JRNL 3300	Covering Conflicts: Peace, War, and the Media
POLS 2370	Religion and Politics
POLS 3465	Government and Politics in the Middle East
PHIL 1120	Understanding the Bible
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 2300	Mysticism
SOCL 2270	Race and Ethnic Relations

GPA Requirement

2.000 GPA required in the minor

Philosophy and Religion

Website (<http://www.northeastern.edu/cssh/philosophy>)

Ronald Sandler
Professor and Chair

371 Holmes Hall
617.373.3636
617.373.4359 (fax)

Ronald Sandler, Professor and Chair, r.sandler@northeastern.edu
John Basl, Assistant Professor and Academic Advisor, j.basl@northeastern.edu
Diana Webster, Department Administrative Officer, d.webster@northeastern.edu

Philosophy addresses questions and theories related to morality, society, religion, and the natural and social sciences. Course work in philosophy provides students with an understanding of the methods and traditions of philosophical thought, as well as with opportunities to critically and collaboratively reflect on the nature of the world and the human situation in it. Through readings, discussion, and writing, students examine questions concerning the validity of moral judgments, political ideas, and scientific theories, as well as questions about values and social policy in

such areas as law, medicine, environment, and technology. Course work in philosophy significantly strengthens study in other areas.

Religious studies offers students the opportunity to acquire an understanding of religious experience within its social, historical, literary, and political context. Courses in religious studies examine specific religious traditions such as Judaism, Islam, and Hinduism, and using a comparative approach they explore themes across faith traditions. Through the major, students have the opportunity to study a range of religions and a variety of methods of understanding the key dimensions of religious life.

Information on experiential learning opportunities, student life, and department faculty can be found at the department website (<http://www.northeastern.edu/cssh/philosophy>).

Academic Progression Standards

A minimum cumulative grade-point average of 2.000 is required to remain in good standing in the major.

The Philosophy Major

Philosophy majors enter diverse careers, ranging from college-level teaching to law, medicine, and business. The program strives to help students sharpen their critical abilities. The department offers four ways to major in philosophy: the standard major, the concentration in law and ethics, the concentration in ethics, and the concentration in religious studies.

Major in Religious Studies

The religious studies major is designed to introduce students to a wide variety of religious experience and expression in the world. Through this major, students are exposed to the basic features of the world's religions and the ethical systems that accompany them. They also have an opportunity to explore diverse methodological approaches to the study of religions in general. This major is designed to give students the expertise to prepare them for graduate school in religious studies or to enhance their abilities in any career that requires a liberal arts education.

Combined Majors

The analytical and critical skills gained from the study of philosophy are a valuable complement to any other area of study. So, too, is having an understanding of the history of ideas and of alternative world views and value systems. For this reason, the department offers combined majors with political science, economics, physics, international affairs, environmental studies, history, English, computer science, criminal justice, and media and screen studies. Details regarding these majors can be found on the program pages.

The combined majors in religious studies bring together knowledge of religious traditions, theology, and practice; awareness of religious experience within its social, historical, literary, and political contexts; and methods of understanding the key dimensions of religious life with other areas of study in which religion plays a large role. Current combined majors include history and religious studies, international affairs and religious studies, religious studies and African- American studies, and Jewish studies and religion. More information on these majors can be found on the program pages.

Preapproved Template Programs in Philosophy and in Religious Studies

The Department of Philosophy and Religion offers preapproved combined major templates in philosophy and religious studies. Each template may be paired with another preapproved template to create a combined major.

To see a list of current preapproved templates, visit the combined majors webpage (<http://www.northeastern.edu/registrar/major-2.html>).

Students may request such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on the preapproved template program, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the myNortheastern web portal (<http://www.myneu.neu.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

Minors

The Department of Philosophy and Religion offers philosophy and religious studies minors, as well as a popular ethics minor. Each of these minors is structured to be highly flexible and to complement study in other majors, while also providing depth of knowledge in philosophy, religion, and ethics. Information on these minors can be found on the program pages.

Programs

Bachelor of Arts (BA)

- Philosophy (p. 819)
- Religious Studies (p. 826)
- English and Philosophy (p. 708)
- Environmental Studies and Philosophy (p. 526)
- History and Philosophy (p. 738)
- History and Religious Studies (p. 740)
- International Affairs and Religious Studies (p. 796)
- Jewish Studies and Religion (p. 814)
- Media and Screen Studies and Philosophy (p. 142)
- Political Science and Philosophy (p. 843)
- Religious Studies and African American-Studies (p. 651)

Bachelor of Science (BS)

- Philosophy (p. 847)
- Computer Science and Philosophy (p. 337)
- Criminal Justice and Philosophy (p. 640)
- Economics and Philosophy (p. 692)
- Physics and Philosophy (p. 592)
- Political Science and Philosophy (p. 859)
- Politics, Philosophy, and Economics (p. 623)

Minor

- Philosophy (p. 863)
- Religious Studies (p. 863)
- Ethics (p. 864)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Philosophy, BA

Philosophy is a basic field of inquiry. Its range encompasses ideas and issues in every domain of human experience, and its methods apply to problems of an unlimited variety. The major in philosophy can develop not only philosophical skill and sophistication but also critical thinking and writing abilities that are readily applicable to pursuits in other academic areas, useful in careers far removed from philosophy, and valuable in

everyday social and personal life. The study of philosophy can profoundly affect both the thinking one does and the kind of person one is.

There are varieties of concentrations of the philosophy major that students may choose from in accordance with their own backgrounds and interests. These include:

- **Philosophy generalist**
Offers students a maximum number of electives so they may choose in accordance with their own backgrounds and interests
- **Concentration in law and ethics**
Focuses elective course work in the areas of law, social and political philosophy, and applied ethics
- **Concentration in ethics**
Focuses elective course work in the areas of ethical theory, applied ethics, and social and political philosophy
- **Concentration in religious studies**
Uses electives to explore a variety of both religious expressions and methods of inquiry
- **Combined majors** in media and screen studies and philosophy, economics and philosophy, environmental studies and philosophy, political science and philosophy, English and philosophy, history and philosophy, computer science and philosophy, criminal justice and philosophy, and physics and philosophy
- **The half major template** in philosophy can be used by students to create their own combined majors.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

Concentrations

Complete one of the following concentrations:

- Philosophy Generalist requirements (p. 820)
- Concentration in Law and Ethics (p. 820)
- Concentration in Ethics (p. 821)
- Concentration in Religious Studies (p. 822)

Philosophy Major Credit Requirement

Complete 36 semester hours in the major.

Upper-Division Electives

Complete three general electives at 3000 level or above that do not double-count with the major or NUpath.

General Electives

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

Program Requirements

128 total semester hours required

PHILOSOPHY GENERALIST

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete three of the following courses with one at the 4000 or 5000 level:		12
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
<i>Additional Electives</i>		
Complete three additional courses in philosophy and religion.		12

CONCENTRATION IN LAW AND ETHICS

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete two of the following courses with one at the 4000 or 5000 level:		8

PHIL 3343	Existentialism
PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4550	Philosophy of Economics
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics
<i>Ethics-Related Electives</i>	
Complete two of the following: 8	
PHIL 1102	Introduction to Contemporary Moral Issues
PHIL 1111	Introduction to World Religions
PHIL 1112	Debating Ethical Controversies
PHIL 1120	Understanding the Bible
PHIL 1130	Ethics: East and West
PHIL 1145	Technology and Human Values
PHIL 1160	Introduction to Economic Justice
PHIL 1165	Moral and Social Problems in Healthcare
PHIL 1170	Business Ethics
PHIL 1180	Environmental Ethics
PHIL 1185	The Ethics of Food
PHIL 1195	Research Ethics
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1290	Chinese Philosophy and Religion
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 2001	Ethics and Evolutionary Games
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2301	Philosophical Problems of Law and Justice
PHIL 2303	Social and Political Philosophy
PHIL 2325	Ancient Philosophy and Political Thought
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism

PHIL 4390	Cults and Sects
PHIL 4545	Religion and Politics in South Asia
PHIL 4550	Philosophy of Economics
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics
<i>Law-Related Electives</i>	
Complete two courses from social science departments. 8	
These courses are to be chosen in consultation with the department:	
AFAM 2360	Politics of Poverty
AFAM 2639	Globalism, Racism, and Human Rights
AFRS 3460	Contemporary Government and Politics in Africa
CRIM 2100	Criminal Due Process
CRIM 2200	Criminology
CRIM 3100	Criminal Law
CRIM 3200	Youth Crime and Justice
CRIM 4010	Gender, Crime, and Justice
CRIM 4020	Race, Crime, and Justice
CRIM 4630	Political Crime and Terrorism
ECON 3440	Public Finance
ECON 3442	Money and Banking
ECON 3520	History of Economic Thought
ENGL 3325	Rhetoric of Law
INTL 1101	Globalization and International Affairs
INTL 3400	International Conflict and Negotiation
JRNL 3550	The First Amendment and the Media
LPSC 1101	Introduction to Law
POLS 2357	Growth and Decline of Cities and Suburbs
POLS 3302	Judicial Process and Behavior
POLS 3324	Law and Society
POLS 4500	U.S. Constitutional Law
POLS 4505	U.S. Civil Liberties
SOCL 1241	Sociology of Violence
SOCL 1245	Sociology of Poverty
SOCL 1246	Environment and Society
SOCL 2358	Current Issues in Cities and Suburbs
SOCL 4518	Law and Society in a Digital World

CONCENTRATION IN ETHICS

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete two of the following courses with one at the 4000 or 5000 level: 8		
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	

PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4550	Philosophy of Economics
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Ethics Courses

Complete four of the following: 16

PHIL 1102	Introduction to Contemporary Moral Issues
PHIL 1111	Introduction to World Religions
PHIL 1112	Debating Ethical Controversies
PHIL 1120	Understanding the Bible
PHIL 1130	Ethics: East and West
PHIL 1145	Technology and Human Values
PHIL 1160	Introduction to Economic Justice
PHIL 1165	Moral and Social Problems in Healthcare
PHIL 1170	Business Ethics
PHIL 1180	Environmental Ethics
PHIL 1185	The Ethics of Food
PHIL 1195	Research Ethics
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1290	Chinese Philosophy and Religion
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 2001	Ethics and Evolutionary Games
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2301	Philosophical Problems of Law and Justice
PHIL 2303	Social and Political Philosophy
PHIL 2325	Ancient Philosophy and Political Thought
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4390	Cults and Sects
PHIL 4545	Religion and Politics in South Asia
PHIL 4550	Philosophy of Economics

PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

CONCENTRATION IN RELIGIOUS STUDIES

Code	Title	Hours
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Philosophy Required Courses

PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4

Philosophy Advanced Elective/Seminar

Complete two of the following courses with one at the 4000 or 5000 level: 8

PHIL 3343	Existentialism
PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4550	Philosophy of Economics
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Religious Studies Courses

Complete three of the following: 12

PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL 1110	Introduction to Religion
PHIL 1111	Introduction to World Religions
PHIL 1130	Ethics: East and West
PHIL 1120	Understanding the Bible
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1231	Image and Icon in South Asia
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies
PHIL 1260	Apocalypticism in Film
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1273	Jainism
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity

PHIL 1281	Islam, Gender, and Fashion
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Foreign language core course	4	Elective	4			
<hr/>						
	16		16		0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Elective	4	Vacation	0	Co-op	0
Elective	4	PHIL 2330	4				
PHIL 2325	4	Elective	4				
Elective	4	PHIL undergraduat elective	4				
		EESH 2000	1				
<hr/>							
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		PHIL 1215 or PHIL 1115	4	Elective	4		
		Advanced philosophy elective	4				
		ENGW 3315	4				
<hr/>							
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		Philosophy seminar	4	Upper-division elective	4		
		PHIL undergraduate elective	4				
		Upper-division elective	4				
<hr/>							
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Elective	4
		PHIL undergraduat elective	4
		Upper-division elective	4
		Elective	4
<hr/>			
	0		16

Total Hours: 129

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	PHIL undergraduat elective	4				
PHIL 1101	4	Foreign language core course	4				

Five Years, Three Co-ops in Spring/Summer 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	PHIL undergraduat elective	4				
PHIL 1101	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
PHIL 2325	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
PHIL 2330	4					PHIL undergraduat elective	4
Upper- division elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Vacation	0
PHIL 1215 or PHIL 1115	4						
Advanced philosophy elective	4						
ENGW 3315	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Elective	4	Elective	4
Philosophy seminar	4	PHIL undergraduat elective	4
PHIL undergraduate elective	4	Upper- division elective	4

Upper- division elective	4	Elective	4
	16		16

Total Hours: 129

Philosophy with Concentration in Law and Ethics, BA**FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL****Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Moral and political elective	4				
PHIL 1101	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Elective	4	Vacation	0	Co-op	0
Elective	4	PHIL 2330	4				
PHIL 2325	4	Elective	4				
Elective	4	Law-related elective	4				
		EESH 2000	1				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		PHIL 1215 or PHIL 1115	4	Elective	4		
		PHIL 3435	4				
		ENGW 3315	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		Moral and political elective	4	Upper- division elective	4		
		Law-related elective	4				
		Upper- division elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Elective	4

Philosophy seminar	4
Upper-division elective	4
Elective	4
0	16

Total Hours: 129

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Moral and political elective	4				
PHIL 1101	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
16	16	0	0	0	0	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
PHIL 2325	4						
Elective	4						
EESH 2000	1						
17	0	0	0	0	0	8	8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
PHIL 2330	4					Elective	4
Law-related elective	4						
Upper-division elective	4						
16	0	0	0	0	0	8	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Vacation	0
PHIL 1215 or PHIL 1115	4						
PHIL 3435	4						
ENGW 3315	4						
16	0	0	0	0	0	0	0

Year 5

Fall	Hours	Spring	Hours
Elective	4	Elective	4

Moral and political elective	4	Philosophy seminar	4
Law-related elective	4	Upper-division elective	4
Upper-division elective	4	Elective	4
16	16	0	0

Total Hours: 129

Philosophy with Concentration in Religious Studies, BA
FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Religious studies elective	4				
PHIL 1101	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
16	16	0	0	0	0	0	0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Elective	4	Vacation	0	Co-op	0
Foreign language core course	4	PHIL 2330	4				
PHIL 2325	4	Elective	4				
Elective	4	Religious studies elective	4				
		EESH 2000	1				
16	17	0	0	0	0	0	0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		PHIL 1215 or PHIL 1115	4	Elective	4		
		PHIL 3435	4				
		ENGW 3315	4				
0	16	8	0	0	0	0	0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Elective	4	Elective	4	Co-op	0
		Philosophy elective	4	Upper-division elective	4		
		Upper-division elective	4				

	Elective	4			
	0	16	8	0	
Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	Elective	4		
		Religious studies seminar	4		
		Upper-division elective	4		
		Elective	4		
	0	16			

Total Hours: 129

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Religious studies elective	4				
PHIL 1101	4	Foreign language core course	4				
Foreign language core course	4	Elective	4				
	16		16	0			0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
PHIL 2325	4						
Elective	4						
EESH 2000	1						
	17		0	0			8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
PHIL 2330	4					Elective	4
Religious studies elective	4						
Upper-division elective	4						
	16		0	0			8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Vacation	0
PHIL 1215 or PHIL 1115	4						
PHIL 3435	4						

ENGW 3315	4				
	16	0	0	0	0
Year 5					
Fall	Hours	Spring	Hours		
Elective	4	Elective	4		
Philosophy seminar	4	Religious studies seminar	4		
Upper-division elective	4	Upper-division elective	4		
Elective	4	Elective	4		
	16		16		

Total Hours: 129

Religious Studies, BA

The program in religion offers students the opportunity to acquire an understanding of religious experience within its social, historical, literary, and political context. Students study specific religious traditions such as Judaism, Islam, and Hinduism. Using a comparative approach, they explore themes across faith traditions. Through the major, a student will have the opportunity to study a range of religions and a variety of methods of understanding the key dimensions of religious life.

The religious studies major is designed to provide students with an introduction to a variety of religious traditions along with the analytical tools necessary to explore religious theology and praxis across five categories: comparative religion, traditions that emerge from the ancient Mediterranean and African worlds, traditions that emerge from Asia, religion and culture, and texts. The religious studies major is offered as both a stand-alone major and in combination with other majors.

- **The standard religion major** offers students a maximum number of electives so they may choose in accordance with their own backgrounds and interests.
- **Combined majors** are offered in Jewish studies and religion, history and religious studies, religious studies and African-American studies, and international affairs and religious studies.
- **The half major template** in religious studies can be used by students to create their own combined majors.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Religious Studies Major Requirements

Code	Title	Hours
Religious Areas		
Complete one course from each of the following five religious areas. Note: A course cannot be used to meet the requirement for more than one area.		20
<i>Comparative Religion</i>		
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 4390	Cults and Sects	
<i>Ancient Mediterranean and African World Traditions</i>		
JWSS 1285	Jewish Religion and Culture	
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 1287	Modern Judaism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2325	Ancient Philosophy and Political Thought	
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 3410	Religion and Spirituality in the African Diaspora	
PHIL 4390	Cults and Sects	
<i>Asian Traditions</i>		
PHIL 1111	Introduction to World Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 2398	Religion and Culture in Indian Cinema	

PHIL 4393	Asian Religions in the United States	
PHIL 4545	Religion and Politics in South Asia	
<i>Religion and Culture</i>		
JWSS 1285	Jewish Religion and Culture	
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1260	Apocalypticism in Film	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1285	Jewish Religion and Culture	
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2398	Religion and Culture in Indian Cinema	
<i>Religious Texts</i>		
PHIL 1120	Understanding the Bible	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4395	Ramayana	
Required Course		
Complete one of the following:		4
PHIL 4390	Cults and Sects	
PHIL 4393	Asian Religions in the United States	
PHIL 4395	Ramayana	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4906	Topics in Religious Studies	
PHIL 5011	Comparative Religious Ethics	
Religious Studies Electives		
Complete three courses in the PHIL subject area, two of which must be numbered above 2000:		12
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	

PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1281	Islam, Gender, and Fashion
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Religious Studies Major Credit Requirement

Complete 36 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	PHIL 1275	4	Vacation	0	Vacation	0
PHIL 1120	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL 1276	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
Elective	4						
Elective	4						
		16		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL 1280	4	Co-op	0	Co-op	0	Elective	4
Elective	4					Elective	4
Elective	4						
Elective	4						
		16		0		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL 1230	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
Elective	4						
Elective	4						
		16		0		0	
Year 5							
Fall	Hours	Spring	Hours				
PHIL 4390	4	PHIL 4606	4				
Religious studies elective	4	Religious studies elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16		16			

Total Hours: 128

English and Philosophy, BA

The Department of English and the Department of Philosophy and Religion offer an interdisciplinary combined major in English and philosophy. Students in the combined major in English and philosophy integrate the study of literature and writing with the study of ethical and philosophical issues and problems.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	
Diversity		
Complete one of the following courses. This course may also be used to fulfill an additional English requirement below:		4
ENGL 2150	Literature and Digital Diversity	
ENGL 2296	Early African-American Literature	
ENGL 2450	Postcolonial Literature	
ENGL 2451	Postcolonial Women Writers	
ENGL 2455	American Women Writers	
ENGL 2460	Multiethnic Literatures of the U.S.	
ENGL 2470	Asian-American Literature	
ENGL 2760	Writing in Global Contexts	
ENGL 3663	The African-American Novel	
ENGL 3676	Representing Gender and Sexuality in Literature	
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
Pre-Nineteenth-Century Literature		
Complete one of the following:		4
ENGL 1600	Introduction to Shakespeare	
ENGL 1700	Global Literature to 1500	
ENGL 2240	17th-Century British Literature	
ENGL 2296	Early African-American Literature	
ENGL 3618	Milton	

ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 4000	Topics in Early Literatures	
ENGL 4010	Topics in Shakespeare	
ENGL 4020	Topics in 17th- and 18th-Century Literatures	
Nineteenth-, Twentieth-, and Twenty-First-Century Literature		
Complete one of the following:		4
ENGL 2260	Romantic Poetry	
ENGL 2330	The American Renaissance	
ENGL 2340	American Realism	
ENGL 3619	Emerson and Thoreau	
ENGL 3720	19th-Century Major Figure	
ENGL 4040	Topics in 19th-Century Literatures	
ENGL 2301	The Graphic Novel	
ENGL 2410	Contemporary American Literature	
ENGL 2440	The Modern Bestseller	
ENGL 2600	Irish Literary Culture (Abroad)	
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)	
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature	
ENGL 3730	20th- and 21st-Century Major Figure	
Theories and Methods		
Complete one of the following:		4
ENGL 1140	Grammar: The Architecture of English	
ENGL 1160	Introduction to Rhetoric	
ENGL 1410	Introduction to Writing Studies	
ENGL 2150	Literature and Digital Diversity	
ENGL 3325	Rhetoric of Law	
ENGL 3340	Technologies of Text	
ENGL 3370	Writing Cultures	
ENGL 3381	The Practice and Theory of Teaching Writing	
ENGL 3700	Narrative Medicine	
ENGL 4100	Topics in Literary Criticism	
ENGL 4400	Opening the Archive	
ENGL 4410	Research in Rhetoric and Writing	
LING 1150	Introduction to Language and Linguistics	
LING 2350	Linguistic Analysis	
LING 3450	Syntax	
LING 3452	Semantics	
LING 3454	History of English	
LING 3456	Language and Gender	
LING 3458	Topics in Linguistics	
Comparative Literature		
Complete one of the following:		4
ENGL 1120	Trouble in Utopia	
ENGL 1130	Animals, Objects, Humans	
ENGL 1450	Reading and Writing in the Digital Age	
ENGL 1500	British Literature to 1800	
ENGL 1502	American Literature to 1865	
ENGL 1503	American Literature 1865 to Present	

ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal
ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
or PHIL 1215		
PHIL 2325	Ancient Philosophy and Political Thought	4

or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4

Restricted Electives

Take three of the following with at least one at the 4000 or 5000 level: 12

PHIL 3343	Existentialism
PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4550	Philosophy of Economics
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Philosophy Electives

Complete three additional electives from the philosophy department. 12

Integrative Requirement

Code	Title	Hours
PHIL 3435	Moral Philosophy	4
ENGL 3619	Emerson and Thoreau	4
or ENGL 4100	Topics in Literary Criticism	

English and Philosophy Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

Environmental Studies and Philosophy, BA

Through this combined major, successful undergraduates will develop an awareness of the scientific, cultural, and political aspects of the world's environmental problems while considering the philosophical, moral, and ethical impacts that such decisions have on human-environment interactions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Note: Principles of Microeconomics (ECON 1116) is a recommended prerequisite for Environmental Economics (ECON 3423), and American Government (POLS 1150) is a recommended prerequisite for Environmental Politics and Policy (POLS 2395).

Code	Title	Hours
Social Science Component		
ECON 3423	Environmental Economics	4
HIST 2342		4
POLS 2395	Environmental Politics and Policy	4
SOCL 1246	Environment and Society	4
Science Component		
<i>Global Climate Change</i>		
ENVR 1110	Global Climate Change	4
<i>Earth and Environmental Sciences</i>		
Complete one of the following:		4
ENVR 1112	Environmental Geology	
ENVR 1200	Dynamic Earth	
<i>Environment</i>		
ENVR 1101	Environmental Science	4
<i>Quantitative Methods</i>		
Complete one of the following:		4-5
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	
MATH 2280	Statistics and Software	

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 1180	Environmental Ethics	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Philosophy of Science/Environment		
Complete one of the following:		4
PHIL 1105	Science and Pseudoscience	
PHIL 4510	Philosophy of Science	
Restricted Electives		
Complete two of the following with at least one course at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	

PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Additional Electives

Complete two additional PHIL courses.	8
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Integrative Courses

Code	Title	Hours
ENVR 5210	Environmental Planning	4
ENVR 5250	Geology and Land-Use Planning	4

Environmental Studies and Philosophy Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirement

128 total semester hours required

History and Philosophy, BA

The Department of Philosophy and Religion and the Department of History offer an interdisciplinary combined major in philosophy and history. Students interested in the combined major integrate the study of philosophy and ethics with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Choose one course from the 1000 level.		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Choose one course from the following:		4
HIST 2390	Africa and the World in Early Times	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete (3) History courses numbered 2303 or above. Cluster is subject to Department approval.		12
Advanced History		
Complete one history course 3000 level or above		4
History Capstone Seminar or Senior Project		
HIST 4701	Capstone Seminar	
Public history concentrators may also select from the following:		
HIST 4903	Fieldwork in History 1	

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Intermediate/Advanced Electives		
Complete three of the following with at least one course at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	

PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Additional Electives

Complete three additional PHIL courses. 8

Integrative Courses

Code	Title	Hours
Complete one of the following:		4
PHIL 2395	Japanese Buddhism	
HIST 2308	Law, Justice, and Society in Modern China	

History and Philosophy Combined-Major Credit Requirement

Complete 85 semester hours in the major.

Program Requirement

128 total semester hours required

History and Religious Studies, BA

The Department of Philosophy and Religion and the Department of History offer an interdisciplinary combined major in religious studies and history. Students interested in the combined major integrate the study of religious traditions, religious praxis, and religious ethics with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
History Colloquium		
HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level		
Choose one course from the 1000 level.		4
History Seminar and Historical Writing		

HIST 2301	The History Seminar	4
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HIST 2302	Historical Writing	1
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Pre-1800 History Elective

Choose one course from the following:		4
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HIST 2390	Africa and the World in Early Times	
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HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
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HIST 1252	Japanese Literature and Culture	
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HIST 1270	Ancient Greece	
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HIST 1271	Ancient Rome	
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HIST 1285	Introduction to Russian Civilization	
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HIST 2330	Colonial and Revolutionary America	
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Intermediate/Advanced History Cluster

Complete (3) History courses numbered 2303 or above. Cluster is subject to Department approval.		12
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Advanced History

Complete one history course 3000 level or above		4
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Religious Studies Requirements

Code	Title	Hours
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Comparative Religion

Complete two of the following:		8
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PHIL 1130	Ethics: East and West	
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PHIL 1230	Sound, Music, and Religion	
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PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
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PHIL 1271	Sex in Judaism, Christianity, and Islam	
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PHIL 1272	Ethics in the World's Religions	
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PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
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PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
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PHIL 2315	Adam and Eve and Their Interpreters	
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PHIL 2330	Modern Philosophy	
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PHIL 4390	Cults and Sects	
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Ancient Mediterranean and African World Traditions

Complete one of the following:		4
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PHIL 1120	Understanding the Bible	
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PHIL 1271	Sex in Judaism, Christianity, and Islam	
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PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
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PHIL 1285 or JWSS 1285	Jewish Religion and Culture	
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PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
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PHIL 2314	Biblical Prophets and Their Interpreters	
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PHIL 2315	Adam and Eve and Their Interpreters	
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PHIL 2316	Interpreting the Bible	
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PHIL 3410	Religion and Spirituality in the African Diaspora	
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PHIL 4390	Cults and Sects	
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Asian Traditions

Complete one of the following:		4
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PHIL 1272	Ethics in the World's Religions	
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PHIL 1276	Indian Religions	
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PHIL 1290	Chinese Philosophy and Religion	
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PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
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PHIL 2394	Chinese Buddhism	
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PHIL 2395	Japanese Buddhism	
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PHIL 2398	Religion and Culture in Indian Cinema	
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PHIL 4393	Asian Religions in the United States	
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PHIL 4545	Religion and Politics in South Asia	
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Religion and Culture

Complete one of the following:		4
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PHIL 1220	The Meaning of Death	
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PHIL 1230	Sound, Music, and Religion	
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PHIL 1271	Sex in Judaism, Christianity, and Islam	
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PHIL 1285 or JWSS 1285	Jewish Religion and Culture	
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PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
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PHIL 2316	Interpreting the Bible	
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PHIL 4390	Cults and Sects	
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WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	
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Ethics

Complete one of the following:		4
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PHIL 1130	Ethics: East and West	
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PHIL 1272	Ethics in the World's Religions	
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PHIL 4606	Seminar: Theories and Methods in Religious Studies	
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PHIL 5001	Global Justice	
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Religious Studies Electives

Complete three of the following, two of which must be numbered above 2000:		12
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PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
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PHIL 1110	Introduction to Religion	
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PHIL 1120	Understanding the Bible	
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PHIL 1130	Ethics: East and West	
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PHIL 1220	The Meaning of Death	
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PHIL 1230	Sound, Music, and Religion	
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PHIL 1231	Image and Icon in South Asia	
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PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
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PHIL 1260	Apocalypticism in Film	
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PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
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PHIL 1271	Sex in Judaism, Christianity, and Islam	
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PHIL 1272	Ethics in the World's Religions	
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PHIL 1273	Jainism	
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PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
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PHIL 1276	Indian Religions	
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PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
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PHIL 1285	Jewish Religion and Culture	
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PHIL 1286	American Judaism	
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PHIL 1287	Modern Judaism	
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PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Integrative Requirements

Code	Title	Hours
Capstone		
Choose one of the following options. Public History concentrators should take HIST 4903 and HIST 4904		4-8
HIST 4701	Capstone Seminar	
PHIL 4390	Cults and Sects	
PHIL 4393	Asian Religions in the United States	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4535	Philosophy of Mind	
PHIL 4545	Religion and Politics in South Asia	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4904	Major Figures in Religious Studies	

PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics
<i>Public History:</i>	
HIST 4903 and HIST 4904	Fieldwork in History 1 and
Integrative Course	
Complete one of the following courses:	
HIST 2370	Renaissance to Enlightenment
PHIL 2395	Japanese Buddhism
PHIL 4390	Cults and Sects

History and Religious Studies Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

International Affairs and Religious Studies, BA

Through this combined major, successful undergraduates will develop an awareness of the interaction of religious views with institutions and cultures in national and international contexts since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social/religious movements; state-society relations (religion, democracy, authoritarianism, social justice and ethics, citizenship); comparative study of religious theology and praxis; and knowledge of particular religious traditions, including Buddhism, Christianity, Hinduism, Islam, and Judaism.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International

Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
Complete one of the following:		4
POLS 1155	Comparative Politics	
ECON 1115	Principles of Macroeconomics	
HIST 2211	The World Since 1945	
INTL 2300	Religion in International Affairs	
Global Dynamics		
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:		8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
<i>Human Rights and Social Justice</i>		
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHIL 1272	Ethics in the World's Religions	
PHIL 5001	Global Justice	
<i>Conflict and Security</i>		
CRIM 4630	Political Crime and Terrorism	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 3330	The Global Cold War	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	

or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development
INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy

ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations

Communication and Media

COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
	Complete two of the following, both of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:	8

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars

HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity

PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
Russia	
HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Religious Studies Requirements

Code	Title	Hours
Comparative Religion		
Complete two of the following:		8
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 4390	Cults and Sects	
Ancient Mediterranean and African World Traditions		
Complete one of the following:		4
JWSS 1285	Jewish Religion and Culture	
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2314	Biblical Prophets and Their Interpreters	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 2316	Interpreting the Bible	
PHIL 3410	Religion and Spirituality in the African Diaspora	
PHIL 4390	Cults and Sects	
Asian Traditions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1272	Ethics in the World's Religions	
PHIL 1276	Indian Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 4393	Asian Religions in the United States	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	

PHIL 2398	Religion and Culture in Indian Cinema	
PHIL 2395	Japanese Buddhism	
PHIL 2394	Chinese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Religion and Culture		
Complete one of the following:		4
JWSS 1285	Jewish Religion and Culture	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1285	Jewish Religion and Culture	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2316	Interpreting the Bible	
PHIL 4390	Cults and Sects	
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies	

Ethics

Complete one of the following:		4
PHIL 1130	Ethics: East and West	
PHIL 1272	Ethics in the World's Religions	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 5001	Global Justice	

Religious Studies Electives

Complete three of the following, two of which must be numbered above 2000:		12
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1285	Jewish Religion and Culture	
PHIL 1286	American Judaism	
PHIL 1287	Modern Judaism	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 1295	Religious Perspectives on Health and Healing	

PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

International Affairs and Religious Studies Integrative Requirement

Code	Title	Hours
Capstone		
INTL 4700	Senior Capstone Seminar in International Affairs	4

International Affairs and Religious Studies Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Jewish Studies and Religion, BA

The combined major in Jewish studies and religion offers students an integrated program of study of two naturally complementary fields. Study of Judaism as a religion is greatly enhanced by broad familiarity with the world's religious traditions; conversely, in-depth knowledge of Jewish history, identity, and cultures provides students of religion with valuable

insight into the ways in which religion interacts with a wide variety of forces to shape the experiences of the adherents of a particular faith. The combined major is designed to enable students to understand the history, cultures, and religion of the Jewish people; analyze and apply theoretical understanding to the interaction between religious, social, and historical factors that have shaped the experiences of the Jewish people; and demonstrate fluency in understanding the major religious traditions of the world. The combined major in Jewish studies and religion is designed to prepare students for graduate work in Jewish studies, religion, or many of the other disciplines that make up Jewish studies or for work within the Jewish community or in communal organizations associated with other religions.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Jewish Studies Requirements

Code	Title	Hours
Required Courses		

PHIL 1285	Jewish Religion and Culture	4
or JWSS 1285	Jewish Religion and Culture	
JWSS 4660	Jewish Studies Module	1

Jewish Religion and Thought

Complete one course from list A or list B. 4

Note: If you complete one course from list B, you will be required to complete one fewer course to satisfy the religious studies electives requirement.

List A

PHIL 1287	Modern Judaism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2322	Responses to the Holocaust

List B

PHIL 1286	American Judaism
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought

Israel Studies

Complete one of the following:	4
ENGL 2610 Contemporary Israeli Literature and Art (Abroad)	
INTL 2100 Modern Israel	
POLS 3470 Arab-Israeli Conflict	

Jewish History

Complete one of the following:	4
HIST 1294 Strangers in a Strange Land? European Jewish History 1750–1945	
or JWSS 1294 Strangers in a Strange Land? European Jewish History 1750–1945	
HIST 2280 Hitler, Germany, and the Holocaust	
HIST 2282 The Holocaust and Comparative Genocide	
HIST 2285 America and the Holocaust	
or JWSS 2285 America and the Holocaust	
HIST 2431 Immigration and Identity in the American Jewish Experience	
or JWSS 2431 Immigration and Identity in the American Jewish Experience	

Jewish Art and Culture

Complete one of the following:	4
CLTR 3450 Israeli and Palestinian Film	
ENGL 2610 Contemporary Israeli Literature and Art (Abroad)	
ENGL 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
or JWSS 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 3685 Modern and Contemporary Jewish Literature	
or JWSS 3685 Modern and Contemporary Jewish Literature	

Jewish Studies Electives

Complete three of the following:	12
CLTR 3450 Israeli and Palestinian Film	
ENGL 2610 Contemporary Israeli Literature and Art (Abroad)	
ENGL 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
or JWSS 3678 Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity	
ENGL 3685 Modern and Contemporary Jewish Literature	
or JWSS 3685 Modern and Contemporary Jewish Literature	
HIST 1294 Strangers in a Strange Land? European Jewish History 1750–1945	
or JWSS 1294 Strangers in a Strange Land? European Jewish History 1750–1945	
HIST 2280 Hitler, Germany, and the Holocaust	
HIST 2282 The Holocaust and Comparative Genocide	
HIST 2285 America and the Holocaust	
or JWSS 2285 America and the Holocaust	

HIST 2431 Immigration and Identity in the American Jewish Experience	
or JWSS 2431 Immigration and Identity in the American Jewish Experience	
INTL 2100 Modern Israel	
JWSS 4992 Directed Study	
PHIL 1120 Understanding the Bible	
PHIL 1270 Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271 Sex in Judaism, Christianity, and Islam	
PHIL 1286 American Judaism	
PHIL 1287 Modern Judaism	
PHIL 2300 Mysticism	
PHIL 2311 The Kabbalah: Jewish Mysticism from the Zohar to Madonna	
PHIL 2313 Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews	
PHIL 2315 Adam and Eve and Their Interpreters	
PHIL 2322 Responses to the Holocaust	
PHIL 3387 Religion, Nation, and Identity in Modern Jewish Thought	
PHIL 4546 Advanced Biblical Studies: Hebrew Bible	
POLS 2370 Religion and Politics	
POLS 3465 Government and Politics in the Middle East	
POLS 3470 Arab-Israeli Conflict	
SOCL 1241 Sociology of Violence	
SOCL 2270 Race and Ethnic Relations	

Religion Requirements

Code	Title	Hours
Required Course		
PHIL 1120	Understanding the Bible	4
Religion		
Complete two of the following:		8
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 2325	Ancient Philosophy and Political Thought	
Comparative Religions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1230	Sound, Music, and Religion	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World’s Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
Philosophy or Religion Seminar		
Complete one of the following:		4
PHIL 4547	Seminar: Apocalypticism	

PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 5001	Global Justice
PHIL 4903	Seminar in Religion
Religious Studies Electives	
Complete four of the following:	16
PHIL 1110	Introduction to Religion
PHIL 1111	Introduction to World Religions
PHIL 1130	Ethics: East and West
PHIL 1120	Understanding the Bible
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1231	Image and Icon in South Asia
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1272	Ethics in the World's Religions
PHIL 1273	Jainism
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285 or JWSS 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4994	Internship

Integrative Requirements

Code **Title** **Hours**

Note: This course may also count as a religion seminar or as a Jewish history course.

Complete one of the following: 4

HIST 1294	Strangers in a Strange Land? European Jewish History 1750–1945
or JWSS 1294	Strangers in a Strange Land? European Jewish History 1750–1945
HIST 2431	Immigration and Identity in the American Jewish Experience
or JWSS 2431	Immigration and Identity in the American Jewish Experience
PHIL 4547	Seminar: Apocalypticism

Hebrew Language Introduction

Complete two courses in Hebrew. These courses also count toward the BA language requirement. 8

Jewish Studies and Religion Major Credit Requirement

80 major semester hours required

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	Foreign language core course	4	Vacation	0	Vacation	0
Elective	4	HIST 2282	4				
PHIL 1285 or JWSS 1285	4	Elective	4				
Foreign language core course	4	Elective	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL 2314	4	HBRW 1102	4	Vacation	0	Co-op	0
PHIL 1275	4	Religious studies elective	4				
HBRW 1101	4	Foreign language core course	4				
Religious studies elective	4	Elective	4				
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	HIST 1294	4	Elective	4	Co-op	0
		ENGW 3315	4	Elective	4		
		Jewish studies elective	4				

HIST 2280		4					
0		16		8		0	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	MUSC 1132	4	Elective	4	Co-op	0
		Jewish studies elective	4	Elective	4		
		Religious studies elective	4				
PHIL 2300		4					
0		16		8		0	
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	Jewish studies elective	4				
		PHIL 4390	4				
		Religious studies elective	4				
		Religion seminar	4				
0		16					

Total Hours: 128

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	PHIL 1150	4	Vacation	0	Vacation	0
Elective	4	Elective	4				
PHIL 1285 or JWSS 1285	4	HIST 2282	4				
Foreign language core course	4	Religious studies elective	4				
16		16		0		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
HBRW 1101	4	Co-op	0	Co-op	0	Foreign language core course	4
PHIL 1275	4					Elective	4
PHIL 2300	4						
PHIL 2314	4						
16		0		0		8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	Elective	4
HBRW 1102	4					Elective	4
Religious studies elective	4						

Foreign language core course	4				
16		0		0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Jewish studies elective	4	Co-op	0	Co-op	0	Vacation	0
Jewish studies elective	4						
Religious studies elective	4						
Elective	4						
16		0		0		0	

Year 5							
Fall	Hours	Spring	Hours				
Jewish studies elective	4	HIST 1294	4				
Religious studies elective	4	HIST 2280	4				
Religious seminar	4	MUSC 1132	4				
Elective	4	PHIL 1280	4				
16		16					

Total Hours: 128

Media and Screen Studies and Philosophy, BA

The Media and Screen Studies Program and the Department of Philosophy and Religion offer a combined major in media and screen studies and philosophy. The combined major integrates the analysis, research, and production of traditional and emerging media along with the study of questions and theories related to morality, society, religion, and the natural and social sciences.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUPath requirements Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Societies and Institutions (SI), and Ethical Reasoning (ER) are met through the major course requirements.

NUPath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Analyzing and Using Data (AD), and Difference and Diversity (DD), may be met through electives in the major.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
CINE 2160	Narrative Filmmaking	
CINE 2336	American Film and Culture	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	
CINE 3500	Film Theory	
CINE 3920	Topics in Film Studies	

Philosophy Requirements

Code	Title	Hours					
Philosophy Required Courses							
PHIL 1115	Introduction to Logic	4					
PHIL 2325	Ancient Philosophy and Political Thought	4					
or POLS 2325	Ancient Philosophy and Political Thought						
PHIL 2330	Modern Philosophy	4					
Restricted Philosophy Electives							
Complete three of the following with at least one course at the 4000 or 5000 level:		12					
PHIL 3343	Existentialism						
PHIL 3435	Moral Philosophy						
PHIL 3460	Philosophy and Literature						
PHIL 4390	Cults and Sects						
PHIL 4510	Philosophy of Science						
PHIL 4500	Theory of Knowledge						
PHIL 4515	Advanced Logic						
PHIL 4535	Philosophy of Mind						
PHIL 4547	Seminar: Apocalypticism						
PHIL 4606	Seminar: Theories and Methods in Religious Studies						
PHIL 4903	Seminar in Religion						
PHIL 4906	Topics in Religious Studies						
PHIL 5001	Global Justice						
PHIL 5011	Comparative Religious Ethics						
Philosophy Electives							
Complete three additional electives from the philosophy department.		12					
Integrative Requirement							
Code	Title	Hours					
CINE 3500	Film Theory	4					
Media and Screen Studies Grade Requirement							
No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements							
Major Credit Requirement							
Complete 76 semester hours in the major.							
Program Requirement							
128 total semester hours required							
Plan of Study							
Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	MSCR elective	4	Vacation	
MSCR 1220	4	MSCR elective	4	Elective	4		
PHIL 1115	4	PHIL 2325 or POLS 2325	4				
ENGW 1111	4	Elective	4				
Elective	4						

	17	16	8	0			
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
EEAM 2000	1	Restricted PHIL elective 1	4	MSCR elective	4	Co-op	
MSCR elective	4	Advanced MSCR elective 1	4	Elective	4		
PHIL 2330	4	PHIL elective	4				
Elective	4	Elective	4				
PHIL elective	4						
	17	16	8	0			
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Restricted PHIL elective 2	4	Vacation	0	Co-op	
		Advanced MSCR elective 2	4				
		PHIL elective	4				
		Elective	4				
	0	16	0	0			
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		MSCR 4623	4	Vacation		Vacation	
		Restricted PHIL elective 3	4				
		CINE 3500	4				
		Elective	4				
	0	16	0	0			
Year 5							
Fall	Hours						
Elective	4						
Elective	4						
Elective	4						
Elective	4						
	16						

Total Hours: 130

Political Science and Philosophy, BA

The combined major in political science and philosophy enables students to develop an integrated understanding of politics, political theory, ethical theory, and theories of justice. Successful students who complete the major will have the training to critically evaluate and assess public policies and social issues on both political and ethical grounds, including issues such as tax policy, immigration, environmental protection, trade policy, healthcare, education, defense policy, and much more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
POLS 2399	Research Methods in Political Science	4
Political Thought/Theory		
Complete two of the following:		8
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Upper-Division Electives		
Complete two courses in the following range:		8
POLS 3000 to POLS 5999		
Political Science Electives		
Complete two courses in the following range:		8
POLS 2000 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 844).

- Campaigns and Elections (p. 844)
- Identity, Culture, and Politics (p. 844)
- International Relations and Diplomacy (p. 844)
- Law and Legal Studies (p. 844)
- Public Policy (p. 844)

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4

PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Philosophy Restricted Electives		
Complete two of the following:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete four additional electives in philosophy or religion. 16

Integrative Requirement

Code	Title	Hours
Complete the following:		
PHIL 5001	Global Justice	4

Program Requirement

128 semester hours required

Concentrations**CONCENTRATION IN CAMPAIGNS AND ELECTIONS**

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	

POLS 2350	State and Local Politics
POLS 2357	Growth and Decline of Cities and Suburbs
POLS 2390	Science, Technology, and Public Policy
POLS 2395	Environmental Politics and Policy
POLS 3425	U.S. Foreign Policy

Religious Studies and African-American Studies, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Religious Studies Major Requirements

Code	Title	Hours
Comparative Religion		
Complete two of the following:		8
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1230	Sound, Music, and Religion	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2300	Mysticism	
PHIL 2315	Adam and Eve and Their Interpreters	
PHIL 4390	Cults and Sects	
Ancient Mediterranean and African World Traditions		
Complete one of the following:		4
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	

PHIL 1285	Jewish Religion and Culture
JWSS 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 4390	Cults and Sects

Asian Traditions

Complete one of the following: 4

PHIL 1111	Introduction to World Religions
PHIL 1272	Ethics in the World's Religions
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 4545	Religion and Politics in South Asia
PHIL 4393	Asian Religions in the United States

Religion and Culture

Complete one of the following: 4

PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1260	Apocalypticism in Film
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1285	Jewish Religion and Culture
JWSS 1285	Jewish Religion and Culture
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 4390	Cults and Sects

Ethics

Complete one of the following: 4

PHIL 1130	Ethics: East and West
PHIL 1272	Ethics in the World's Religions
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 5011	Comparative Religious Ethics

Religious Studies Electives

Complete three religious studies electives, two of which must be above the 2000 level: 12

PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions
PHIL 1110	Introduction to Religion
PHIL 1111	Introduction to World Religions
PHIL 1120	Understanding the Bible
PHIL 1130	Ethics: East and West
PHIL 1220	The Meaning of Death
PHIL 1230	Sound, Music, and Religion
PHIL 1231	Image and Icon in South Asia
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies
PHIL 1260	Apocalypticism in Film
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1273	Jainism
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1281	Islam, Gender, and Fashion
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana

PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Advanced Elective

Complete one of the following: 4

PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4547	Seminar: Apocalypticism
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 5011	Comparative Religious Ethics

African-American Studies Requirements

Code	Title	Hours
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Introductory Courses

AFAM 1101	Introduction to African-American Studies	4
AFAM 1109	Foundations of Black Culture 1	4
AFRS 1185	Gender in the African Diaspora	4
CLTR 1509		

Research

AFRS 3310

Senior Capstone

AFAM 4700

Electives

Complete three AFAM or AFRS courses at the 2000 level or above. 12

Note: Electives may not double count for other AFAM or HIST combined-major requirements.

AFAM 2000 to AFAM 5999

AFRS 2000 to AFRS 5999

Integrative Requirement

Code	Title	Hours
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Complete one of the following: 4

PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects

Program Requirement

128 total semester hours required

Philosophy, BS

Philosophy is a basic field of inquiry. Its range encompasses ideas and issues in every domain of human experience, and its methods apply to problems of an unlimited variety. The major in philosophy can develop not only philosophical skill and sophistication but also critical thinking and writing abilities that are readily applicable to pursuits in other academic areas, useful in careers far removed from philosophy, and valuable in everyday social and personal life. The study of philosophy can profoundly affect both the thinking one does and the kind of person one is.

There are a variety of ways to major in philosophy that students may choose from in accordance with their own backgrounds and interests. These include:

- **Philosophy generalist**
Offers students a maximum number of electives so they may choose in accordance with their own backgrounds and interests
- **Concentration in law and ethics**
Focuses elective course work in the areas of law, social and political philosophy, and applied ethics
- **Concentration in ethics**
Focuses elective course work in the areas of ethical theory, applied ethics, and social and political philosophy
- **Concentration in religious studies**
Uses electives to explore a variety of both religious expressions and methods of inquiry
- **Combined majors** in media and screen studies and philosophy, economics and philosophy, environmental studies and philosophy, political science and philosophy, English and philosophy, history and philosophy, criminal justice and philosophy, computer science and philosophy, and physics and philosophy
- **The half major template** in philosophy can be used by students to create their own combined majors.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Concentration

Complete one of the following concentrations:

- Philosophy Generalist requirements (p. 847)
- Concentration in Law and Ethics (p. 847)
- Concentration in Ethics (p. 848)
- Concentration in Religious Studies (p. 849)

Philosophy Major Credit Requirement

Complete 36 semester hours in the major.

Upper-Division Electives

Complete three general electives at 3000 level or above that do not double-count with the major or NUpath.

General Electives

Additional courses taken beyond college and major course requirements to satisfy graduation credit requirements.

Program Requirements

128 total semester hours required

Concentrations

PHILOSOPHY GENERALIST

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete three of the following courses with one at the 4000 or 5000 level:		12
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete three additional courses in philosophy and religion. 12

CONCENTRATION IN LAW AND ETHICS

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	

PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete two of the following courses with one at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
<i>Ethics-Related Electives</i>		
Complete two of the following:		8
PHIL 1102	Introduction to Contemporary Moral Issues	
PHIL 1111	Introduction to World Religions	
PHIL 1112	Debating Ethical Controversies	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1145	Technology and Human Values	
PHIL 1160	Introduction to Economic Justice	
PHIL 1165	Moral and Social Problems in Healthcare	
PHIL 1170	Business Ethics	
PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 1666	The Problem of Evil in Film	
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis	
PHIL 2001	Ethics and Evolutionary Games	
PHIL 2301	Philosophical Problems of Law and Justice	
PHIL 2303	Social and Political Philosophy	
PHIL 2325	Ancient Philosophy and Political Thought	

PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4390	Cults and Sects	
PHIL 4545	Religion and Politics in South Asia	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
<i>Law-Related Electives</i>		
Complete two courses from social science departments. These courses are to be chosen in consultation with the department:		8
AFAM 2360	Politics of Poverty	
AFAM 2639	Globalism, Racism, and Human Rights	
AFRS 3460	Contemporary Government and Politics in Africa	
CRIM 2100	Criminal Due Process	
CRIM 2200	Criminology	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
CRIM 4630	Political Crime and Terrorism	
ECON 3440	Public Finance	
ECON 3442	Money and Banking	
ECON 3520	History of Economic Thought	
ENGL 3325	Rhetoric of Law	
INTL 1101	Globalization and International Affairs	
INTL 3400	International Conflict and Negotiation	
JRNL 3550	The First Amendment and the Media	
LPSC 1101	Introduction to Law	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1246	Environment and Society	
SOCL 2358	Current Issues in Cities and Suburbs	
SOCL 4518	Law and Society in a Digital World	

CONCENTRATION IN ETHICS

Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete two of the following courses with one at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	

PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4515	Advanced Logic
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4550	Philosophy of Economics
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics
<i>Ethics Courses</i>	
Complete four of the following:	16
PHIL 1102	Introduction to Contemporary Moral Issues
PHIL 1111	Introduction to World Religions
PHIL 1112	Debating Ethical Controversies
PHIL 1120	Understanding the Bible
PHIL 1130	Ethics: East and West
PHIL 1145	Technology and Human Values
PHIL 1160	Introduction to Economic Justice
PHIL 1165	Moral and Social Problems in Healthcare
PHIL 1170	Business Ethics
PHIL 1180	Environmental Ethics
PHIL 1185	The Ethics of Food
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1276	Indian Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1290	Chinese Philosophy and Religion
PHIL 1666	The Problem of Evil in Film
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis
PHIL 2001	Ethics and Evolutionary Games
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2301	Philosophical Problems of Law and Justice
PHIL 2303	Social and Political Philosophy
PHIL 2325	Ancient Philosophy and Political Thought
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4390	Cults and Sects
PHIL 4545	Religion and Politics in South Asia

PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
CONCENTRATION IN RELIGIOUS STUDIES		
Code	Title	Hours
<i>Philosophy Required Courses</i>		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 3435	Moral Philosophy	4
<i>Philosophy Advanced Elective/Seminar</i>		
Complete two of the following courses with one at the 4000 or 5000 level:		8
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
<i>Religious Studies Courses</i>		
Complete three of the following:		12
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1111	Introduction to World Religions	
PHIL 1130	Ethics: East and West	
PHIL 1120	Understanding the Bible	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	

PHIL 1281	Islam, Gender, and Fashion
PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	PHIL undergraduate elective	4				
PHIL 1101	4	Elective	4				
Elective	4	Elective	4				
		16			16		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Elective	4	Vacation	0	Co-op	0
PHIL 2325	4	PHIL 2330	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
		16			17		

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHIL 1115	4	PHIL undergraduate elective	4	Co-op	0
		PHIL undergraduate elective	4	Elective	4		
		ENGW 3315	4				
		Elective	4				
		0			16		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Advanced philosophy elective	4	Upper-division elective	4	Co-op	0
		Upper-division elective	4	Elective	4		
		Elective	4				
		Elective	4				
		0			16		

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Philosophy seminar	4				
		Elective	4				
		Upper-division elective	4				
		Elective	4				
		0			16		

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	PHIL undergraduate elective	4				
PHIL 1101	4	Elective	4				
Elective	4	Elective	4				
		16			16		

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4

PHIL 2325	4	Elective	4
Elective	4		
Elective	4		
EESH 2000	1		
<hr/>			
	17	0	0
			8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Upper-division elective	4
PHIL 2330	4					Elective	4
Elective	4						
Elective	4						
<hr/>							
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHIL undergraduate elective	4	Co-op	0	Co-op	0	Vacation	0
PHIL 1215 or PHIL 1115	4						
Elective	4						
ENGW 3315	4						
<hr/>							
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Advanced philosophy elective	4	Philosophy seminar	4
PHIL undergraduate elective	4	Elective	4
Upper-division elective	4	Upper-division elective	4
Elective	4	Elective	4
<hr/>			
	16		16

Total Hours: 129

Philosophy with Concentration in Law and Ethics, BS

FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Moral and political elective	4				
PHIL 1101	4	Elective	4				
Elective	4	Elective	4				
<hr/>							
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Elective	4	Vacation	0	Co-op	0
PHIL 2325	4	PHIL 2330	4				
Elective	4	Elective	4				

Elective	4	Law-related elective	4
		EESH 2000	1
<hr/>			
	16	17	0
			0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHIL 1115	4	Elective	4	Co-op	0
		Moral and political elective	4	Elective	4		
		ENGW 3315	4				
		Elective	4				
<hr/>							
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHIL 3435	4	Upper-division elective	4	Co-op	0
		Law-related elective	4	Elective	4		
		Upper-division elective	4				
		Elective	4				
<hr/>							
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Philosophy seminar	4
		Elective	4
		Upper-division elective	4
		Elective	4
<hr/>			
	0		16

Total Hours: 129

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MATH 1215	4	Elective	4	Vacation	0	Vacation	0
ENGW 1111	4	Moral and political elective	4				
PHIL 1101	4	Elective	4				
Elective	4	Law-related elective	4				
<hr/>							
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Elective	4
PHIL 2325	4					Elective	4
Elective	4						
Elective	4						

EESH 2000	1				
	17	0	0		8
Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
Elective	4	Co-op	0	Co-op	0
				Upper-division elective	4
PHIL 2330	4			Elective	4
Elective	4				
Moral and political elective	4				
	16	0	0		8
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Law-related elective	4	Co-op	0	Co-op	0
PHIL 1115	4				
Elective	4				
ENGW 3315	4				
	16	0	0		0
Year 5					
Fall	Hours	Spring	Hours		
PHIL 3435	4	Philosophy seminar	4		
Upper-division elective	4	Elective	4		
Elective	4	Upper-division elective	4		
Elective	4	Elective	4		
	16		16		

Total Hours: 129

Philosophy with Concentration in Religious Studies, BS**FIVE YEARS, THREE CO-OPS IN SUMMER 2/FALL**

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
MATH 1215	4	Elective	4	Vacation	0
ENGW 1111	4	Religious studies elective	4		
PHIL 1101	4	Elective	4		
Elective	4	Elective	4		
	16		16	0	0
Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
Elective	4	Elective	4	Vacation	0
PHIL 2325	4	PHIL 2330	4		
Elective	4	Elective	4		
Elective	4	Elective	4		
		EESH 2000	1		
	16		17	0	0

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	PHIL 1115	4	Upper-division elective	4
				Co-op	0
		Religious studies elective	4	Elective	4
		ENGW 3315	4		
		Elective	4		
	0		16		8
					0
Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
Co-op	0	PHIL 3435	4	PHIL undergraduate elective	4
				Co-op	0
		Religious studies elective	4	Elective	4
		Upper-division elective	4		
		Elective	4		
	0		16		8
					0
Year 5					
Fall	Hours	Spring	Hours		
Co-op	0	Elective	4		
		Philosophy seminar	4		
		Upper-division elective	4		
		Elective	4		
	0		16		

Total Hours: 129

FIVE YEARS, THREE CO-OPS IN SPRING/SUMMER 1

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
MATH 1215	4	Elective	4	Vacation	0
ENGW 1111	4	Religious studies elective	4		
PHIL 1101	4	Elective	4		
Elective	4	Elective	4		
	16		16	0	0
Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
Elective	4	Co-op	0	Co-op	0
PHIL 2325	4				Elective
Elective	4				
Elective	4				
EESH 2000	1				
	17		0		0
					8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	Co-op	0	Co-op	0	Upper-division elective	4
PHIL 2330	4					Elective	4
Religious studies elective	4						
Elective	4						
	16		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Religious studies elective	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
PHIL 1115	4						
ENGW 3315	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
PHIL 3435	4	Philosophy seminar	4
PHIL undergraduate elective	4	PHIL undergraduate elective	4
Upper-division elective	4	Elective	4
Elective	4	Upper-division elective	4
	16		16

Total Hours: 129

Computer Science and Philosophy, BS

The computer science and philosophy combined major offers an opportunity to obtain a fluency in formal logic, including logical proofs and the ability to represent arguments clearly and evaluate them for cogency. Students will find that logic plays a fundamental role in computer science as they experience an in-depth programming foundation. The philosophy curriculum also focuses on oral and written communication, as well as ethical and social issues related to computing and information technologies.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
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Computer Science Overview

CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5
CS 3000	Algorithms and Data	4
CS 3500	Object-Oriented Design	4
CS 3800	Theory of Computation	4
CS 4500 and CS 4501	Software Development and Recitation for CS 4500	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken for upper-division electives.

Complete 8 credits of upper-division CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Philosophy Courses

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
or PHIL 2330	Modern Philosophy	
PHIL 1145	Technology and Human Values	4
PHIL 4515	Advanced Logic	4
Philosophy Restricted Electives		

Take two courses, at least one of which is at the 4000 or 5000 level, from the following: 8

PHIL 3343	Existentialism
PHIL 3435	Moral Philosophy
PHIL 3460	Philosophy and Literature
PHIL 4390	Cults and Sects
PHIL 4500	Theory of Knowledge
PHIL 4510	Philosophy of Science
PHIL 4535	Philosophy of Mind
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4906	Topics in Religious Studies
PHIL 5001	Global Justice
PHIL 5011	Comparative Religious Ethics

Electives

Take three PHIL courses. 12

Integrative Course Requirement

Code	Title	Hours
CS 3800	Theory of Computation	
PHIL 4515	Advanced Logic	

These courses will double count in other areas of your major.

Computer Science English Requirement

Code	Title	Hours
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one course from the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3309	Advanced Writing in the Humanities	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete 11 general electives.		44

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing-Intensive in the Major
- Interpreting Culture
- Understanding Societies and Institutions
- Employing Ethical Reasoning
- Writing in the First Year

- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study**Sample Patterns:****Four Years, Two Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	CS 3500	4	Vacation	0
CS 1800 and CS 1802	5	CS 2800 and CS 2801	5	Elective	4		
CS 2500 and CS 2501	5	PHIL 2325, POLS 2325, or PHIL 2330	4				
ENGW 1111	4	Elective	4				
PHIL 1115	4						
		19		18		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS elective 1	4	ENGW 3302, 3309, or 3315	4	Co-op	4
PHIL 1145	4	PHIL elective 2	4	Elective	4		
PHIL elective 1	4	PHIL elective 3	4				
Elective	4	Elective	4				
		CS 1210	1				
		16		17		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	Elective	4	Co-op	4
		CS elective 2	4	Elective	4		
		PHIL 4515	4				
		Elective	4				
		THTR 1170	1				
		0		17		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500	4	Elective	4		
		PHIL intermediate/ advanced elective	4	Elective	4		
		PHIL capstone	4				
		Elective	4				
		0		16		8	

Total Hours: 135

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1200	1	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 1800 and CS 1801	4	CS 2800 and CS 2801	5				
CS 2500 and CS 2501	5	PHIL 2325, POLS 2325, or PHIL 2330	4				
ENGW 1111	4	Elective	4				
PHIL 1115 or 1215	4						
	18		18			0	0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS elective 1	4	Vacation		Co-op	
CS 3500	4	PHIL elective 1	4				
PHIL 1145	4	PHIL elective 2	4				
Elective	4	Elective	4				
		CS 1210	1				
	16		17			0	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 3800	4	ENGW 3302, 3309, or 3315	4	Co-op	
		PHIL 4515	4	Elective	4		
		PHIL elective 3	4				
		Elective	4				
		THTR 1170	1				
	0		17			8	0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	
		PHIL intermediate/ advanced elective	4	Elective	4		
		Elective	4				
		Elective	4				
	0		16			8	0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS 4500	4				
		PHIL capstone	4				
		Elective	4				
		Elective	4				
	0		16				

Total Hours: 134

Criminal Justice and Philosophy, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Major Requirements

Code	Title	Hours
Criminal Justice Required Courses		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4

Co-op Integration Seminar

Co-op students should complete the seminars below. Non-co-op students should complete a 4-semester-hour CRIM elective.

Complete two of the following courses. CRIM 2000 and CRIM 3000 are required for the first co-op. CRIM 4000 is required if a second co-op is taken.

CRIM 2000	Co-op Integration Seminar 1	
CRIM 3000	Co-op Integration Seminar 2	
CRIM 4000	Co-op Integration Seminar 3	

Capstone

CRIM 4949	Senior Capstone Seminar	4
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Major Electives

Thematic Elective

Complete one of the following: 4

CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	

Survey Elective

Complete one of the following: 4

CRIM 3010	Criminal Violence	
CRIM 3030	Global Criminology	
CRIM 3040	Psychology of Crime	
CRIM 3050	Organized Crime	
CRIM 3100	Criminal Law	
CRIM 3200	Youth Crime and Justice	

CRIM 3300	Punishment in the Age of Mass Incarceration	
CRIM 3400	Corporate Security: Securing the Private Sector	
CRIM 3500	Policing a Democratic Society	
<i>System-Wide Electives</i>		
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
<i>Criminal Justice Elective</i>		
Complete one additional CRIM course.		4

Philosophy Requirements

Code	Title	Hours
Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL/POLS 2325	Ancient Philosophy and Political Thought	4
PHIL 2303	Social and Political Philosophy	4
PHIL 2330	Modern Philosophy	4
Intermediate/Advanced Electives		
Complete two of the following:		
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
Philosophy 4000/5000 Elective		
Complete one of the following not used to satisfy previous requirements:		4
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
Philosophy Electives		
Complete two additional PHIL courses.		8

Integrative Requirement

Code	Title	Hours
Philosophy Integrative Course		
PHIL 2301	Philosophical Problems of Law and Justice	4
Criminal Justice Integrative Course		
CRIM 1400	Human Trafficking	4

Criminal Justice and Philosophy Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Economics and Philosophy, BS

Both philosophy and economics are the disciplines of critical thinking—thinking in concrete and abstract terms to help put the world in perspective. The combined economics and philosophy major provides students with training to critically evaluate and assess policies and issues on both economic and ethical grounds, including issues such as globalization, immigration, environmental protections, the minimum wage, a fair and just tax, just working environments, and many more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Economics Requirements

Code	Title	Hours
Introduction to College		
Complete one of the following:		1
ECON 1000	Economics at Northeastern	
PHIL 1000	Philosophy at Northeastern	
Required Economics Courses		
Grades in the following must average a minimum of 2.000:		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2350	Statistics	4
ECON 2560	Applied Econometrics	4
ECON 3520	History of Economic Thought	4

MATH 1231	Calculus for Business and Economics	4
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Economics Electives

Complete two economics electives with not more than one below the 3000 level.	8
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Philosophy Requirements

Code	Title	Hours
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Philosophy Required Courses

PHIL 1115	Introduction to Logic	4
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PHIL 2325	Ancient Philosophy and Political Thought	4
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PHIL 2330	Modern Philosophy	4
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Advanced Philosophy Elective

Complete one of the following:	4
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PHIL 3343	Existentialism	
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PHIL 3435	Moral Philosophy	
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PHIL 3460	Philosophy and Literature	
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PHIL 4390	Cults and Sects	
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PHIL 4500	Theory of Knowledge	
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PHIL 4510	Philosophy of Science	
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PHIL 4515	Advanced Logic	
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PHIL 4535	Philosophy of Mind	
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PHIL 4547	Seminar: Apocalypticism	
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PHIL 4606	Seminar: Theories and Methods in Religious Studies	
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PHIL 4903	Seminar in Religion	
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PHIL 4906	Topics in Religious Studies	
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PHIL 5001	Global Justice	
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PHIL 5011	Comparative Religious Ethics	
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Additional Electives

Complete three additional electives in philosophy or religion. At least one must be numbered 2000 or above.	12
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Integrative Requirements

Code	Title	Hours
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Complete two of the following that have not been used in above requirements:	8
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PHIL 3435	Moral Philosophy	
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PHIL 4500	Theory of Knowledge	
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PHIL 4510	Philosophy of Science	
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PHIL 4550	Philosophy of Economics	
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PHIL 5001	Global Justice	
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PHIL 4992	Directed Study	
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ECON 4992	Directed Study	
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Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Physics and Philosophy, BS

The combined major in physics and philosophy provides a strong foundation in classical and modern physics, including studies of the various physical phenomena including electromagnetism, dynamics,

building blocks of matter, energy, and radiation. It also provides students with an understanding of the methods and traditions of philosophical thought, as well as with opportunities to critically and collaboratively reflect on the nature of the world and the human situation in it. Students will be able to describe the method by which physical "law" is made manifest in the sciences, how this knowledge compares with other epistemological models studied in other contexts, and philosophical views on the status and source of physical "law."

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Physics Major Requirements

Code	Title	Hours
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Introductory Physics*Physics 1*

Complete one of the following:	5
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PHYS 1161 and PHYS 1162	Physics 1 and Lab for PHYS 1161	
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PHYS 1151 and PHYS 1152 and PHYS 1153	Physics for Engineering 1 and Lab for PHYS 1151 and Interactive Learning Seminar for PHYS 1151	
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Physics 2

Complete one of the following:	5
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PHYS 1165 and PHYS 1166	Physics 2 and Lab for PHYS 1165	
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PHYS 1155 and PHYS 1156 and PHYS 1157	Physics for Engineering 2 and Lab for PHYS 1155 and Interactive Learning Seminar for PHYS 1155	
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Intermediate Physics

PHYS 2303	Modern Physics	4
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PHYS 2305	Thermodynamics and Statistical Mechanics	4
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PHYS 2371 and PHYS 2372	Electronics and Lab for PHYS 2371	4
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Advanced Physics

PHYS 3600	Advanced Physics Laboratory	4
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PHYS 3602	Electricity and Magnetism	4
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PHYS 5115	Quantum Mechanics	4
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Physics Elective

Complete one of the following:	4
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MATH 4606	Mathematical and Computational Methods for Physics
PHYS 5111	Astrophysics and Cosmology
PHYS 5113	Introduction to Particle and Nuclear Physics
PHYS 5116	Complex Networks and Applications
PHYS 5260	Introduction to Nanoscience and Nanotechnology
PHYS 4621	Biological Physics 1
PHYS 4623	Medical Physics
PHYS 4651	Medical Physics Seminar 1
PHYS 4652	Medical Physics Seminar 2

Philosophy Major Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
PHIL 4500	Theory of Knowledge	4
Philosophy Advanced Elective		
Complete one of the following:		4
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	
Additional Electives		
Complete four PHIL courses.		16

Physics/Philosophy Integrative Requirements

Code	Title	Hours
Integrative Course Requirements		
PHIL 4510	Philosophy of Science	4
PHYS 3601	Classical Dynamics	4
Breadth Courses		
Mathematics		
MATH 1341	Calculus 1 for Science and Engineering	4
MATH 1342	Calculus 2 for Science and Engineering	4
MATH 2321	Calculus 3 for Science and Engineering	4
MATH 2341	Differential Equations and Linear Algebra for Engineering	4

Physics and Philosophy Major Credit Requirement

Complete 98 semester hours in the major.

Program Requirement

132 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	Vacation	0	Vacation	0
PHYS 1161	4	PHYS 1166	1				
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	PHIL 2325	4				
PHIL 1115	4	Elective	4				
ENGW 1111	4						
		18		17		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303	4	PHYS 2305	4	Vacation	0	Co-op	0
PHYS 2371	3	MATH 2341	4				
PHYS 2372	1	PHIL elective	4				
MATH 2321	4	PHIL elective	4				
PHIL 2330	4	EESC 2000	1				
		16		17		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3601 ¹	4	PHYS 3600	4	Co-op	0
		PHYS elective	4	Elective	4		
		PHIL 4505 or PHIL 4500	4				
		PHIL elective	4				
		0		16		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602	4	Elective	4	Co-op	0
		PHIL 4510	4	Elective	4		
		PHIL elective	4				
		ENGW 3307	4				
		0		16		8	
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 5115	4				
		PHIL advanced elective	4				
		Elective	4				
		Elective	4				
		0		16		0	

Total Hours: 132

FOUR YEARS, TWO CO-OPS IN SUMMER 2/FALL**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 1000	1	PHYS 1165	4	MATH 2321	4	MATH 2341	4
PHYS 1161	4	PHYS 1166	1	Elective	4	Elective	4
PHYS 1162	1	PHYS 1167	0				
PHYS 1163	0	MATH 1342	4				
MATH 1341	4	PHIL 2325	4				
PHIL 1115 or 1215	4	PHIL 2330	4				
ENGW 1111	4						
	18		17		8		8

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PHYS 2303	4	PHYS 2305	4	PHYS 3600	4	Co-op	0
PHYS 2371	3	PHYS 3601 ¹	4	Elective	4		
PHYS 2372	1	PHIL elective	4				
PHIL elective	4	PHIL elective	4				
PHIL elective	4	EESC 2000	1				
	16		17		8		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	PHYS 3602	4	ENGW 3307	4	Co-op	0
		PHYS elective	4	Elective	4		
		PHIL 4505 or PHIL 4500	4				
		PHIL 4510	4				
	0		16		8		0

Year 4

Fall	Hours	Spring	Hours
Co-op	0	PHYS 5115	4
		PHIL advanced elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 132

¹ PHYS 3601 offered spring and fall (even years)**Political Science and Philosophy, BS**

The combined major in political science and philosophy enables students to develop an integrated understanding of politics, political theory, ethical theory, and theories of justice. Students who complete the major will have the training to critically evaluate and assess public policies and social issues on both political and ethical grounds, including issues such as tax policy, immigration, environmental protection, trade policy, healthcare, education, defense policy, and much more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
POLS 2399	Research Methods in Political Science	4

Political Thought/Theory

Complete two of the following:	8
POLS 2325	Ancient Philosophy and Political Thought
POLS 2328	Modern Political Thought
POLS 2330	American Political Thought
POLS 2332	Contemporary Political Thought

Political Science Upper-Division Electives

Complete two courses in the following range:	8
POLS 3000 to POLS 5999	

Political Science Electives

Complete two courses in the following range:	8
POLS 2000 to POLS 5999	

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 860).

- Campaigns and Elections (p. 860)
- Identity, Culture, and Politics (p. 860)
- International Relations and Diplomacy (p. 860)
- Law and Legal Studies (p. 860)
- Public Policy (p. 860)

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4

Philosophy Restricted Electives

Complete two courses from the following with one course at the 4000 or 5000 level: 8

PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete four additional electives in philosophy or religion. 16

Integrative Requirement

Code	Title	Hours
PHIL 5001	Global Justice	4

Program Requirement

128 semester hours required

Concentrations

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
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Required Courses

With advisor approval, a co-op or internship may be substituted in place of POLS 4947:

POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following: 8

POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
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Core Course

POLS 3418	Nationalism	4
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Electives

Complete three of the following: 12

POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
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Experiential/Practicum Requirement

Complete one of the following: 4

POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following: 12

POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
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Complete four of the following: 16

POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
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Core Requirement

POLS 3307	Public Policy and Administration	4
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Electives

Complete three of the following: 12

POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	

POLS 2395	Environmental Politics and Policy
POLS 3425	U.S. Foreign Policy

Politics, Philosophy, and Economics, BS

Website (<https://www.northeastern.edu/csssh/ppe>)

Serena Parekh

Associate Professor and Program Director

371 Holmes Hall
617.373.3636
617.373.4359 (fax)

Serena Parekh, Associate Professor and Program Director,
S.Parekh@northeastern.edu (r.sandler@northeastern.edu)

The PPE major at Northeastern University brings together three of the most important approaches to understanding the world around us: political science, philosophy, and economics. The PPE major is an interdisciplinary degree that not only provides students with the analytic tools from three different disciplines but also teaches students to make connections across disciplines and to keep multiple perspectives in mind when analyzing complex social phenomena. This interdisciplinary perspective and set of skills are indispensable in our increasingly interconnected world and are essential in addressing the kinds of complex global problems future leaders will need to tackle.

There are a number of varieties of the PPE major that students may choose from in accordance with their own backgrounds and interests. These include:

- environment and energy policy
- international political economy
- law and justice
- logic and game theory
- political philosophy
- public and economic policy

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Politics, Philosophy, and Economics Major Requirements

Code	Title	Hours
Foundation Course		
PHIL 1160	Introduction to Economic Justice	4
Core Courses		
<i>Philosophy</i>		
PHIL 2303	Social and Political Philosophy	4
PHIL 1115	Introduction to Logic	4
PHIL 3435	Moral Philosophy	4
or PHIL 2325	Ancient Philosophy and Political Thought	
<i>Political Science</i>		
POLS 1160	International Relations	4
POLS 3405	International Political Economy	4
POLS 1150	American Government	4
or POLS 1155	Comparative Politics	
<i>Economics</i>		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
or ECON 2316	Microeconomic Theory	
Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
PHIL 5001	Global Justice	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Major Electives

Code	Title	Hours
Complete two of the following:		8-12
ECON 2000 to ECON 5999		
PHIL 2000 to PHIL 5999		
POLS 2000 to POLS 5999		

Concentration

Complete one of the following concentrations:

- Environment and Energy Policy (p.)
- International Political Economy (p.)
- Law and Justice (p.)
- Logic and Game Theory (p.)
- Political Philosophy (p.)
- Public and Economic Policy (p.)

Supporting Courses

Code	Title	Hours
Complete one of the following:		4
AFAM/POLS 2360	Politics of Poverty	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
AFAM 2639	Globalism, Racism, and Human Rights	
CRIM 4010	Gender, Crime, and Justice	
ECON 4916	Advanced Selected Topics in Microeconomics	

HIST 1225	Gender, Race, and Medicine
HIST 2000	Native American Resistance: Past and Present
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1281	Islam, Gender, and Fashion
PHIL 3500	Sexuality, Gender, and the Law
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
SOCL/WMNS 1260	Gender in a Changing Society
SOCL 2270	Race and Ethnic Relations
SOCL 4520	Race, Class, and Gender
WMNS 1101	Sex, Gender, and Popular Culture
WMNS 1103	Introduction to Women's, Gender, and Sexuality Studies
WMNS/ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective
WMNS 2304	Communication and Gender
WMNS/HIST 2373	Gender and Sexuality in World History
WMNS/INTL 2480	Women and World Politics
WMNS 2505	Digital Feminisms
WMNS/HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy
WMNS 3100	Gender, Social Justice, and Transnational Activism
WMNS/COMM 3304	Communication and Inclusion
WMNS 3500	Sexuality, Gender, and the Law

Statistics and Mathematics

MATH 1231	Calculus for Business and Economics	4
or MATH 1241	Calculus 1	
ECON 2350	Statistics	4
or POLS 2400	Quantitative Techniques	
or MATH 2280	Statistics and Software	

Experiential Learning Requirement

Complete one co-op, study abroad, qualifying Dialogue of Civilizations, or one of the following:		4
ECON 4996	Experiential Education Directed Study	
ECON 4970	Junior/Senior Honors Project 1	
ECON 4971	Junior/Senior Honors Project 2	
POLS 4970	Junior/Senior Honors Project 1	
POLS 4971	Junior/Senior Honors Project 2	
POLS 4942	Internship in Politics	
POLS 4996	Experiential Education Directed Study	

Major GPA/Credit Requirement

Complete 68 semester hours in the major with a 3.000 GPA.

Course Distribution Requirement

Complete at least four courses in each of the following subject areas: ECON, PHIL, and POLS.

Program Requirement

128 total semester hours required

Concentrations**CONCENTRATION IN ENVIRONMENT AND ENERGY POLICY**

Code	Title	Hours
Complete two of the following:		8
ECON 3423	Environmental Economics	
or ECON 3425	Energy Economics	
PHIL 1180	Environmental Ethics	
or PHIL 1185	The Ethics of Food	
POLS 2395	Environmental Politics and Policy	

Complete one of the following:		4
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	

CONCENTRATION IN INTERNATIONAL POLITICAL ECONOMY

Code	Title	Hours
Complete two of the following:		8
ECON 1290	History of the Global Economy	
ECON 1291	Development Economics	
ECON 2316	Microeconomic Theory	
ECON 3404	International Food Economics and Policy	
ECON 4635	International Economics	
PHIL 1185	The Ethics of Food	
PHIL 1170	Business Ethics	
POLS 3406	International Law	
POLS 3487	Politics of Developing Nations	
PHIL 4545	Religion and Politics in South Asia	

Complete one of the following:		4
ECON 1292	Economic History of the Middle East	
ECON 1293	European Economic History	
HIST 2360	History of Capitalism in East Asia	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3465	Government and Politics in the Middle East	
PHIL 4545	Religion and Politics in South Asia	

CONCENTRATION IN LAW AND JUSTICE

Code	Title	Hours
Complete three of the following, only two of which may be POLS courses:		12
ECON 3424	Law and Economics	
ECON 1240	Economics of Crime	
HIST 2308	Law, Justice, and Society in Modern China	
PHIL 2301	Philosophical Problems of Law and Justice	
PHIL 3500	Sexuality, Gender, and the Law	
PHIL 5001	Global Justice	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	

POLS 4505	U.S. Civil Liberties
WMNS 3500	Sexuality, Gender, and the Law

CONCENTRATION IN LOGIC AND GAME THEORY

Code	Title	Hours
Required Course		
PHIL 1115	Introduction to Logic	4

Electives

Complete two of the following:		
ECON 4681	Information Economics and Game Theory	8
PHIL 2001	Ethics and Evolutionary Games	
PHIL 4515	Advanced Logic	
TDB:	Concepts in Game Theory	

CONCENTRATION IN POLITICAL PHILOSOPHY

Code	Title	Hours
Politics Courses		
Complete two of the following:		
POLS 2328	Modern Political Thought	8
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Philosophy Course

Complete one of the following:		
PHIL 2301	Philosophical Problems of Law and Justice	4
PHIL 3435	Moral Philosophy	
PHIL 3500	Sexuality, Gender, and the Law	
PHIL 5001	Global Justice	

CONCENTRATION IN PUBLIC AND ECONOMIC POLICY

Code	Title	Hours
Required Course		
POLS 3307	Public Policy and Administration	4

Elective Courses

Complete two of the following:		
ECON 1240	Economics of Crime	8
ECON 1281	Economics of the Creative Industries	
ECON 3410	Labor Economics	
ECON 3414	Economics of Human Capital	
ECON 3420	Urban Economic Issues	
ECON 3422	Economics of Transportation	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4680	Competition Policy and Regulation	
HIST 3800	American Conservatism from the New Deal to the Present	
PHIL 1160	Introduction to Economic Justice	
PHIL 5001	Global Justice	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2360	Politics of Poverty	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	

POLS 2334	Bureaucracy and Government Organizations
POLS 2335	Budgeting and Taxation
POLS 2350	State and Local Politics
POLS 2357	Growth and Decline of Cities and Suburbs
POLS 3425	U.S. Foreign Policy

Philosophy, Minor

Philosophy addresses questions and theories related to morality, society, religion, and the natural and social sciences. Course work in philosophy provides students with an understanding of the methods and traditions of philosophical thought, as well as opportunities to critically and collaboratively reflect on the nature of the world and the human situation in it. Through readings, discussion, and writing, students examine questions concerning the validity of moral judgments, political ideas, and scientific theories, as well as questions about values and social policy in such areas as law, medicine, and technology.

Course work in philosophy significantly strengthens study in other areas. Many students find that their studies in their major can be beneficially supplemented by pursuing studies in philosophy. Declaring a minor in philosophy will allow you to continue your philosophical studies throughout your time at Northeastern University.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4

Elective Courses

Code	Title	Hours
Complete three courses in philosophy and religion.		12

GPA Requirement

2.000 GPA required in the minor

Religious Studies, Minor

The religious studies minor provides a short form of the religious studies major that can be tailored to the needs of the student's major.

The program in religion offers students the opportunity to acquire an understanding of religious experience within its social, historical, literary, and political context. Students study specific religious traditions such as Judaism, Islam, and Hinduism, and using a comparative approach they explore themes across faith traditions. Through the minor, a student will have the opportunity to study a range of religions and a variety of methods of understanding the key dimensions of religious life.

The religious studies minor is designed to provide the student with an introduction to a variety of religious traditions along with the analytical tools necessary to explore religious theology and praxis across five

categories: comparative religion, traditions that emerge from the ancient Mediterranean and African worlds, traditions that emerge from Asia, religion and culture, and texts. Through this minor, students are exposed to the basic features of the world's religions and the ethical systems that accompany them. They also have an opportunity to explore diverse methodological approaches to the study of religions in general. This minor is designed to help students enhance their abilities in any career that requires a liberal arts education.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Complete four of the following:		16
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1220	The Meaning of Death	
PHIL 1260	Apocalypticism in Film	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4390	Cults and Sects	

Elective Course

Code	Title	Hours
Complete one of the following:		4
PHIL 1104	Goddesses, Witches, Saints, and Sinners: Women in Western Religions	
PHIL 1110	Introduction to Religion	
PHIL 1111	Introduction to World Religions	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1220	The Meaning of Death	
PHIL 1230	Sound, Music, and Religion	
PHIL 1231	Image and Icon in South Asia	
PHIL 1250	Jesus in the Gospels, American Culture, and the Movies	
PHIL 1260	Apocalypticism in Film	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1273	Jainism	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1281	Islam, Gender, and Fashion	

PHIL 1285	Jewish Religion and Culture
PHIL 1286	American Judaism
PHIL 1287	Modern Judaism
PHIL 1290	Chinese Philosophy and Religion
PHIL 1295	Religious Perspectives on Health and Healing
PHIL 1410	From Vodou and the Rastas to Afro-Islam: African Religions in the Americas
PHIL 1666	The Problem of Evil in Film
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life
PHIL 2300	Mysticism
PHIL 2311	The Kabbalah: Jewish Mysticism from the Zohar to Madonna
PHIL 2313	Exploring the Jewish Diaspora—From Mountain Jews to Crypto-Jews
PHIL 2314	Biblical Prophets and Their Interpreters
PHIL 2315	Adam and Eve and Their Interpreters
PHIL 2316	Interpreting the Bible
PHIL 2322	Responses to the Holocaust
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 2398	Religion and Culture in Indian Cinema
PHIL 3387	Religion, Nation, and Identity in Modern Jewish Thought
PHIL 3410	Religion and Spirituality in the African Diaspora
PHIL 4390	Cults and Sects
PHIL 4393	Asian Religions in the United States
PHIL 4395	Ramayana
PHIL 4545	Religion and Politics in South Asia
PHIL 4546	Advanced Biblical Studies: Hebrew Bible
PHIL 4547	Seminar: Apocalypticism
PHIL 4606	Seminar: Theories and Methods in Religious Studies
PHIL 4903	Seminar in Religion
PHIL 4904	Major Figures in Religious Studies
PHIL 4906	Topics in Religious Studies
PHIL 4992	Directed Study
PHIL 5011	Comparative Religious Ethics

GPA Requirement

2.000 GPA required in the minor

Ethics, Minor

The Department of Philosophy and Religion offers a minor in ethics for students who are interested in exploring the ethical dimensions of contemporary issues. From medicine and the environment to business and religion, the minor provides a range of courses that speak to issues you care about and provides you with the tools to explore them. The minor includes courses in ethical theory (e.g., moral philosophy, social and political philosophy, and philosophical problems of law and justice); applied ethics (e.g., environmental ethics, business ethics, moral and social problems in healthcare, and technology and human values);

and religious ethics (e.g., ethics east and west and cults and sects). It emphasizes developing critical analytical and evaluative skills.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Complete four courses from the following list, two of which must be at or above the 2000 level:		
PHIL 1102	Introduction to Contemporary Moral Issues	16
PHIL 1111	Introduction to World Religions	
PHIL 1112	Debating Ethical Controversies	
PHIL 1120	Understanding the Bible	
PHIL 1130	Ethics: East and West	
PHIL 1145	Technology and Human Values	
PHIL 1160	Introduction to Economic Justice	
PHIL 1165	Moral and Social Problems in Healthcare	
PHIL 1170	Business Ethics	
PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	
PHIL 1195	Research Ethics	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	
PHIL 1272	Ethics in the World's Religions	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1276	Indian Religions	
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 1666	The Problem of Evil in Film	
PHIL 1667	Science Fiction and Film: Moral Dilemmas and Ethical Analysis	
PHIL 2001	Ethics and Evolutionary Games	
PHIL 2100	The Religious Worlds of Boston: Faith and Devotion in Urban Life	
PHIL 2301	Philosophical Problems of Law and Justice	
PHIL 2325	Ancient Philosophy and Political Thought	
PHIL 2303	Social and Political Philosophy	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 3435	Moral Philosophy	
PHIL 4390	Cults and Sects	
PHIL 4545	Religion and Politics in South Asia	
PHIL 4550	Philosophy of Economics	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

GPA Requirement

2.000 GPA required in the minor

Political Science

Website (<http://www.northeastern.edu/polisci>)

Thomas J. Vicino, PhD

Professor and Chair

960A Renaissance Park

617.373.2796

617.373.5311 (fax)

Jermichael Young, Administrative Secretary, je.young@northeastern.edu

Political science teaches the art and science of politics in the United States and throughout the world. Study leadership with a former U.S. presidential candidate. Spend seven weeks visiting the United Nations and other organizations in Geneva, Switzerland. Apply for the White House internship program or to the British Parliament. Develop aid programs in a Saharan village in Niger. Write opinion pieces for an outstanding student political journal. Compete to represent an Arab country as part of one of the top Model Arab League teams in the United States. Political science is a discipline and a subject of study that has worldwide applications and exciting and experiential job opportunities. Politics matter wherever there are groups of people trying to get things done.

Political science majors start their journey with core courses on American government, comparative politics, international relations, and research methods. After that, students choose from a wealth of courses on specific topics from international security to legal studies to public policy.

Political science co-ops include responsible positions in local, state, and federal government agencies; law firms; nonprofit institutions; and corporations. Many students complete either a co-op position or an internship with a congressional representative, a senator, a governor, or other elected public officials, or at an international organization or nonprofit.

Political science students are among the most active on campus through extracurricular programs designed to expand their leadership ability, including the Political Science Student Association, International Relations Council, Pi Sigma Alpha honor society, Model United Nations, Model Arab League, Model NATO, student government, College Democrats and Republicans, and other student groups. Students also may qualify for the University Honors Program. With these experiences on their resumé, students are prepared to succeed in law school, graduate school, careers in government and the nonprofit sector, as well as in teaching, journalism, legislative or lobbying positions, public relations activities, and work in international corporations and nongovernmental organizations (NGOs).

Academic Progression Standards

Same as university-wide standards described under "Academic Status (p. 31)."

PlusOne Program (MA) in Political Science

Political science majors at the end of their sophomore year or the beginning of their junior year may qualify for application to the PlusOne program that combines the BA with the master's degree in political science. Students interested in this option should consult with the departmental graduate coordinator.

Programs

Bachelor of Arts (BA)

- Political Science (p. 866)
- Environmental Studies and Political Science (p. 527)
- History and Political Science (p. 739)
- Journalism and Political Science (p. 166)
- Media and Screen Studies and Political Science (p. 144)
- Political Science and Communication Studies (p. 154)
- Political Science and Economics (p. 680)
- Political Science and Human Services (p. 757)
- Political Science and International Affairs (p. 800)
- Political Science and Philosophy (p. 843)
- Sociology and Political Science (p. 888)

Bachelor of Science (BS)

- Political Science (p. 890)
- Biology and Political Science (p. 492)
- Computer Science and Political Science (p. 342)
- Criminal Justice and Political Science (p. 641)
- Political Science and Business Administration (p. 256)
- Political Science and Communication Studies (p. 156)
- Political Science and Economics (p. 686)
- Political Science and Human Services (p. 766)
- Political Science and Philosophy (p. 859)
- Politics, Philosophy, and Economics (p. 623)

Minors

- Political Science (p. 909)
- American Political Institutions (p. 909)
- International Security Studies (p. 910)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Political Science, BA

The Bachelor of Arts in Political Science provides a set of introductory courses to the discipline, followed by methodology courses, electives, and a capstone course. Students explore and analyze the many facets of American government, comparative politics, international relations, and political philosophy. With elective courses, students may choose from among a number of concentrations or follow their own curricular path. At the college level the Bachelor of Arts includes a foreign language requirement.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Introduction to College

Complete "Introduction to College" for your major.

Political Science Major Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Theory		
Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Capstone		
Complete one of the following:		4
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Political Science Experiential Learning Requirement

Complete one course or experience from the following options. *Note:* Up to two credit-bearing courses count toward political science electives.

Code	Title	Hours
Courses		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4942	Internship in Politics	
Co-op or Study Abroad		
Complete one cooperative education experience or one study-abroad experience.		4

Political Science Electives

Note: You may use four courses from the elective area to fulfill a concentration.

Code	Title	Hours
Complete six political science electives with a minimum of four numbered 2000 or above.		24

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 867).

- American political institutions (p. 867)
- Campaigns and elections (p. 867)
- Comparative politics (p. 867)
- Identity, culture, and politics (p. 867)
- International relations and diplomacy (p. 867)
- Law and legal studies (p. 868)
- Public policy (p. 868)
- Security studies (p. 868)

Political Science Major Credit Requirement

Complete 52 semester hours in the major.

Program Requirements

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	

POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	

Regional Requirements

Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		

Experiential/Practicum Requirement

Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
POLS 1155	4	POLS 1150	4	Vacation	0	Vacation
POLS 1156	0	POLS 1151	0			
Elective	4	MATH 1215	4			
Foreign language core course	4	POLS 1160	4			
POLS 1000	1	POLS 1161	0			

ENGW 1111	4	Foreign language core course	4			
	17		16	0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 2399	4	POLS 2400	4	Vacation	0	Co-op	0
POLS intermediate/advanced undergraduate elective	4	POLS intermediate/advanced undergraduate elective					
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
EESH 2000	1						
	17		12	0		0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	ENVR 5210	4	Co-op	0
		POLS 2400	4	Political Theory course	4		
		ENVR 3300	4				
		ENVR 3301	1				
		POLS undergraduate elective	4				
	0		17	8		0	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 5250	4	Elective	4	Co-op	0
		POLS undergraduate elective	4	Elective	4		
		POLS undergraduate elective	4				
		Foreign language core course	4				
	0		16	8		0	

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Elective	4
		Elective	4
		Elective	4
		Elective	4
	0		16

Total Hours: 127

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	POLS 1155	4	Vacation	0	Vacation	0
MATH 1251	4	POLS 1156	0				
POLS 1150	4	ECON 1116	4				
POLS 1151	0	ENVR 1200	4				
ENVR 1101	4	SOCL 1246	4				
	16		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160	4	Co-op	0	Co-op	0	PHIL 3480	4
POLS 1161	0					ECON 3423	4
ENVR 1445	4						
HIST 2342	4						
Foreign language core course	4						
	16		0		0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	ENVR 5210	4
POLS 2400	4					Political Theory course	4
ENVR 3300	4						
ENVR 3301	1						
POLS undergraduate elective	4						
	17		0		0		8
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENVR 5250	4	Co-op	0	Co-op	0	Vacation	0
POLS undergraduate elective	4						
POLS undergraduate elective	4						
Foreign language core course	4						
	16		0		0		0
Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 2395	4	Elective	4				
Foreign language core course	4	Elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
	16		16				

Total Hours: 129

Environmental Studies and Political Science, BA

In this combined major, successful undergraduates will develop an awareness of the scientific, cultural, societal, and political aspects of the world's environmental problems through the lens of geopolitical decisions, public policy, and environmental regulations.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Environmental Studies Requirements

Code	Title	Hours
Social Science Component		
<i>Philosophy</i>		
PHIL 1180	Environmental Ethics	4
<i>Sociology</i>		
SOCL 1246	Environment and Society	4
<i>Economics</i>		
ECON 1116	Principles of Microeconomics	4
ECON 3423	Environmental Economics	4
Science Component		
Complete one course in each of the following four subject areas:		
<i>Biology</i>		
ENVR 1445		4
<i>Earth and Environmental Sciences</i>		
Complete one of the following:		
ENVR 1112	Environmental Geology	4
ENVR 1200	Dynamic Earth	4
<i>Environment</i>		
ENVR 1101	Environmental Science	4
<i>Quantitative Methods</i>		
Complete one of the following:		
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	4-5
MATH 2280	Statistics and Software	4-5

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150 and POLS 1151	American Government and Recitation for POLS 1150	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Restricted Electives		
Complete two of the following:		8
POLS 2334	Bureaucracy and Government Organizations	
POLS 2390	Science, Technology, and Public Policy	
POLS 3307	Public Policy and Administration	
POLS 3407	International Organizations	
POLS 3487	Politics of Developing Nations	
Political Science Electives		
Complete two POLS courses.		8

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 528).

- Comparative Politics (p. 528)
- International Relations and Diplomacy (p. 528)
- Law and Legal Studies (p. 528)
- Public Policy (p. 528)

Integrative Courses

Code	Title	Hours
Integrative Courses		
Complete two of the following:		8
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
POLS 2395	Environmental Politics and Policy	
Capstone Requirement		
Complete one of the following:		1-8
ENVR 4900	Earth and Environmental Science Capstone	
ENVR 4997	Senior Thesis	
POLS 4701	Political Science Senior Capstone	
POLS 4702 and POLS 4703	Senior Thesis Preparation and Senior Thesis	

Environmental Studies and Political Science Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations**CONCENTRATION IN COMPARATIVE POLITICS**

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	

Regional Requirements

Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		

Experiential/Practicum Requirement

Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Plan of Study

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ENGW 1111	4	MATH 1215	4	Vacation	0	Vacation
ENVR 1101	4	PHIL 1180	4			
POLS 1150 and POLS 1151	4	POLS 1155 and POLS 1156	4			
SOCL 1246	4	Foreign language course	4			
		16			16	0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ECON 1116	4	Co-op	0	Co-op	0	Elective
ENVR 1104, ENVR 1112, or ENVR 1200	4					Elective
POLS 1160 and POLS 1161	4					
Foreign language course	4					
		16			0	0

Year 3					
Fall	Hours	Spring	Hours	Summer 1	Hours
ECON 3423	4	Co-op	0	Co-op	0
POLS 2400	4				Elective
Foreign language course	4				
Political thought course	4				
Elective	4				
		20			0

Year 4					
Fall	Hours	Spring	Hours	Summer 1	Hours
ENGW 3315 or 3308	4	Co-op	0	Co-op	0
ENVR 5210 or 5250	4				
POLS undergraduate elective	4				
Qualitative methods course	4-5				
		16-17			0

Year 5					
Fall	Hours	Spring	Hours	Summer 1	Hours
ENVR 5250 or POLS 2395	4	ENVR 1445	4		
Capstone or elective	1-4	Capstone or elective	1-4		
Elective	4	Elective	4		
POLS undergraduate elective	4	POLS undergraduate elective	4		
POLS undergraduate elective	4				
		17-20			13-16

Total Hours: 130-137

Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ENGW 1111	4	MATH 1215	4	Vacation	0	Vacation
ENVR 1101	4	PHIL 1180	4			
POLS 1150 and POLS 1151	4	POLS 1155 and POLS 1156	4			
SOCL 1246	4	Foreign language course	4			
		16			16	0

Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ECON 1116	4	ECON 3423	4	Vacation	0	Co-op

ENVR 1104, ENVR 1112, or ENVR 1200	4	POLS 2400	4				
POLS 1160 and POLS 1161	4	Elective	4				
Foreign language course	4	Foreign language course	4				
		POLS undergraduate elective	4				
	16		20			0	0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENVR 1445	4	Elective	4	Co-op	0
		Political thought course	4	Elective	4		
		POLS undergraduate elective	4				
		Qualitative methods course	4-5				
	0		16-17			8	0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGR 3315 or 3308	4	Elective	4	Co-op	0
		ENVR 5210 or 5250	4	Elective	4		
		Capstone or elective	1-4				
		Elective	4				
		POLS undergraduate elective	4				
	0		17-20			8	0
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	ENVR 5250 or POLS 2395	4				
		Capstone or elective	1-4				
		Elective	4				
		POLS undergraduat elective	4				
	0		13-16				

Total Hours: 130-137

History and Political Science, BA

The Department of History and the Department of Political Science offer an interdisciplinary combined major in history and political science.

Students interested in the combined major integrate the study of political systems and theories with the study and analysis of human history.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

History Major Requirements

Code	Title	Hours
History Colloquium		
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4
Introductory Level Course		
Complete one course from HIST 1001 to HIST 1999		4
History Seminar and Historical Writing		
HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1
Pre-1800 History Elective		
Complete one of the following:		4
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
HIST 1252	Japanese Literature and Culture	
HIST 1270	Ancient Greece	
HIST 1271	Ancient Rome	
HIST 1285	Introduction to Russian Civilization	
HIST 2330	Colonial and Revolutionary America	
Intermediate/Advanced History Cluster		
Complete three HIST courses numbered 2300 or above. Cluster is subject to department approval.		12
Advanced History		
Complete one HIST course numbered 3000 or above.		4

Political Science Major Requirements

Code	Title	Hours
Political Science Foundation Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Electives		
Complete three POLS courses numbered 2300 or above.		12

Supporting Courses

Code	Title	Hours
Complete one of the following:		4
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Integrative Requirement

Code	Title	Hours
Integrative Course		
Complete one of the following:		4
HIST 1130	Introduction to the History of the United States	
HIST 2211	The World Since 1945	
HIST 2282	The Holocaust and Comparative Genocide	
HIST 3800	American Conservatism from the New Deal to the Present	

Capstone

Complete one of the following. (Public History concentrations take HIST 4903 & HIST 4904)		4
HIST 4701	Capstone Seminar	
HIST 4903	Fieldwork in History 1	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

History and Political Science Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirements

128 total semester hours required

Journalism and Political Science, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Creative Expression/Innovation (CI), Interpreting Culture (IC), Understanding Societies and Institutions (SI), Analyzing and Using Data (AD), Engaging Difference and Diversity (DD), and Employing Ethical Reasoning (ER) are met through the major requirements. All other Nupath requirements must be met through electives.

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Journalism Major Requirements

Code	Title	Hours
Journalism Introductory Course		
JRNL 1150	Understanding Today's News	4
Journalism Foundations		
Must receive a C or better in the following:		
JRNL 1101 and JRNL 1102	Journalism 1: Fundamentals of Reporting and Journalist's Toolbox	5
JRNL 2201	Journalism 2: Intermediate Reporting	4
JRNL 2301	Visual Storytelling in Journalism	4
JRNL 3610	Digital Storytelling and Social Media	4
Ethics		
JRNL 4650	Ethics and Issues in Journalism	4
Journalism Electives		
Take three JRNL courses.		12

Political Science Requirements

Code	Title	Hours
Political Science Foundation Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Thought		
POLS 2325	Ancient Philosophy and Political Thought	4
POLS 2328	Modern Political Thought	4
POLS 2330	American Political Thought	4
POLS 2332	Contemporary Political Thought	4
Political Science Capstone or Thesis		
Complete one of the following:		4

POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	
Political Science Electives		
Complete two upper-division POLS courses or complete a concentration from the following list:		8
POLS 2300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 167).

- American political institutions (p. 167)
- Campaigns and elections (p. 167)
- Comparative politics (p. 168)
- Identity, culture, and politics (p. 168)
- International relations and diplomacy (p. 168)
- Law and legal studies (p. 168)
- Public policy (p. 168)
- Security studies (p. 168)

Integrative Requirement

Code	Title	Hours
JRNL 3550	The First Amendment and the Media	4
COMM 3320	Political Communication	4
or POLS 3320	Politics and Mass Media	

Journalism and Political Science Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following: 8

POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		
POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	

POLS 4915	Model Arab League
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad

Core Courses

Complete three of the following:	12
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 3408	International Security
POLS 3435	Politics and Governance of Europe and the European Union
POLS 3470	Arab-Israeli Conflict

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	

POLS 3487	Politics of Developing Nations
POLS 4918	Model NATO

Political Science and Communication Studies, BA

The combined major in political science and communication studies offers students the opportunity to integrate the study of politics and government with different forms and mediums of communication. Students complete the core courses in political science along with core courses in communication studies that cover public speaking and persuasion. This combined major highlights the important role played by different forms of communication in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Methodology		
POLS 2399	Research Methods in Political Science	4
or COMM 2301	Communication Research Methods	
Political Science Upper-Division Electives		
Complete two courses in the following range:		8
POLS 3300 to POLS 5999		
Political Science Electives		

Complete two courses in the following range:	8
POLS 2000 to POLS 5999	

Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 155).

- American Political Institutions (p. 155)
- Campaigns and Elections (p. 155)
- Identity, Culture, and Politics (p. 155)
- Law and Legal Studies (p. 156)
- Public Policy (p. 156)

Communication Studies Courses

Code	Title	Hours
Core Courses in Political Communication		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 1210	Persuasion and Rhetoric	4
Communication Studies Electives		
Complete six of the following:		24
COMM 1231	Principles of Organizational Communication	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	
COMM 2301	Communication Research Methods	
COMM 2303	Global and Intercultural Communication	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
COMM 3201	Health Communication	
COMM 3304	Communication and Inclusion	
COMM 3409	Advocacy Writing	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3451	Advertising Practices	
COMM 3501	Free Speech: Law and Practice	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4102	Health Communication Campaigns	
COMM 4602	Contemporary Rhetorical Theory	
COMM 4625	Online Communities	
COMM 4631	Crisis Communication and Image Management	
COMM 4992	Directed Study	
COMM 4994	Internship in Communication	

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3320 or COMM 3320	Politics and Mass Media Political Communication	4
POLS 2333		4

Capstone Requirement

Complete one of the following. This course also counts toward the political science or communication studies elective requirement: 4

COMM 4102	Health Communication Campaigns
COMM 4530	Communication and Quality of Life
COMM 4602	Contemporary Rhetorical Theory
COMM 4625	Online Communities
POLS 4701	Political Science Senior Capstone
POLS 4703	Senior Thesis

Political Science and Communication Studies Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	

POLS 2368	Music and Politics in America and Abroad
POLS 2370	Religion and Politics
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
POLS 3324	Law and Society

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Media and Screen Studies and Political Science, BA

The Media and Screen Studies Program and the Department of Political Science offer a combined major in media and screen studies and political science. The combined major integrates the analysis, research, and production of traditional and emerging media along with courses on American government, comparative politics, international relations, and research methods.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

NUpath requirements Interpreting Culture (IC), Societies and Institutions (SI), and Analyzing and Using Data (AD) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Required Courses		
MSCR 1220	Media, Culture, and Society	4
MSCR 2220	Understanding Media and Film	4
MSCR 4623	Theories of Media and Culture	4
Elective Courses		
Complete four of the following:		16
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3420	Digital Media Culture	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Elective Courses		
Complete two of the following:		8
CINE 3500	Film Theory	

MSCR 4208	TV History
MSCR 4602	Media and Democracy
MSCR 4622	Special Topics in Media and Screen Studies
MSCR 4992	Directed Study
MSCR 4993	Independent Study

Political Science Requirements

Code	Title	Hours
Required Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Politics in Media/Art		
Complete two courses. Consult academic advisor for additional courses.		8
POLS 2368	Music and Politics in America and Abroad	

Elective Courses		
Complete two POLS courses or complete a concentration.		8

Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 145).

- Identity, Culture, and Politics (p.)
- Law and Legal Studies (p.)

Integrative Requirements

Code	Title	Hours
Required Courses		
MSCR 4602	Media and Democracy	4
POLS 3320	Politics and Mass Media	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	

POLS 2368	Music and Politics in America and Abroad
POLS 2370	Religion and Politics
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy
POLS 3324	Law and Society

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		
		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	MSCR elective	4	Vacation	0
MSCR 1220	4	POLS 1155 and POLS 1156	4	Elective	4		
POLS 1150 and POLS 1151	4	MSCR elective	4				
ENGW 1111	4	Elective	4				
Elective	4						
		17		16		8	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160 and POLS 1161	4	Co-op	4	Co-op	4	Elective	4
POLS 2400	4					Elective	4
MSCR elective	4						
Advanced MSCR elective	4						
EEAM 2000	1						
		17		0		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Political thought elective	4	MSCR elective	4	Vacation	4	Co-op	0
Advanced MSCR elective	4	Politics in media/art elective	4				
Elective	4	Elective	4				
Elective	4	Elective	4				
		16		16		0	

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		Politics in media/art elective	4	Vacation		Vacation
		POLS elective	4			
		Elective	4			
		MSCR 4602	4			
	0		16		0	0

Year 5	
Fall	Hours
MSCR 4623	4
POLS 3320	4
POLS elective	4
Elective	4
	16

Total Hours: 130

Political Science and Economics, BA

The combined major in political science and economics offers students the opportunity to integrate the study of politics and government with the study of economics. Students complete the core courses in political science along with core courses in economics that cover both macroeconomic and microeconomic perspectives. This combined major highlights the important role that the economy plays in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4

POLS 1160	International Relations	4
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Political Theory		
Complete one of the following:		
POLS 2330	American Political Thought	4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Restricted Electives		
Complete two of the following:		
POLS 3307	Public Policy and Administration	8
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2360	Politics of Poverty	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	

Political Science Electives		
Complete two courses in the following range, or complete a concentration as outlined below:		
POLS 3300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 681).

- American Political Institutions (p. 681)
- Campaigns and Elections (p. 681)
- International Relations and Diplomacy (p. 681)
- Public Policy (p. 681)

Economics Requirements for BA

Code	Title	Hours
Breadth Courses		
MATH 1231	Calculus for Business and Economics	4
CS 1100	Computer Science and Its Applications	4
Required Economics Courses		
Grades in the required economics courses and in Quantitative Techniques (POLS 2400) or Statistics (ECON 2350) must average a minimum of 2.000:		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 3520	History of Economic Thought	4

Economics Electives		
Complete three economics electives with no more than one below 2990.		
		12

Supporting Courses

Complete either of the statistics and departmental elective combinations listed below:

COMBINATION A

Code	Title	Hours
Statistics		
POLS 2400	Quantitative Techniques	4
Economics		
Complete one of the following:		4
ECON 3404	International Food Economics and Policy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4634	Comparative Economics	
ECON 4635	International Economics	

COMBINATION B

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Political Science		
Complete one course in the following range:		4
POLS 2401 to POLS 5999		

Integrative Requirements

Code	Title	Hours
Senior Seminar/Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following: 8

POLS 2345	Urban Policies and Politics
POLS 2355	
POLS 3310	Public Opinion, Voting, and Elections
POLS 3162	Local Campaigns and Elections
POLS 3320	Politics and Mass Media
POLS 3402	
POLS 3304	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Plan of Study

Four Years, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	MATH 1231	4	Vacation	0	Vacation	0
POLS 1155	4	POLS 1150	4				

POLS 1156	0	POLS 1151	0
ECON 1115	4	CS 1100	4
Elective	4	ECON 1116	4
	16		16

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160	4	POLS 2400	4	Vacation	0	Vacation	0
POLS 1161	0	ECON 2315	4				
ECON undergraduate elective	4	POLS undergraduate elective	4				
POLS undergraduate elective	4	Elective	4				
Elective	4						
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Elective	4	Vacation	0	Vacation	0
ECON 2316	4	POLS intermediate/advanced undergraduate elective	4				
Political Theory course	4	Elective	4				
ECON undergraduate elective	4	Elective	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
ECON 2560	4	POLS 4701	4
POLS intermediate/advanced undergraduate elective	4	ECON intermediate/advanced undergraduate elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 128

Political Science and Human Services, BA**Program Requirements**

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Electives		
Complete three courses in the following range:		12
POLS 2330 to POLS 5999		

Supporting Course for Political Science

Code	Title	Hours
Mathematics		
Complete one of the following to fulfill the prerequisite for POLS 2400		4
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Human Services Internship		
HUSV 4994	Human Services Internship	6
Human Services & Diverse Populations		
Complete one of the following:		4
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	

HUSV 4866	Intercultural Studies through Human Services	
Human Services Electives		
Complete two HUSV courses.		8
Organization		
SOCL 3440	Sociology of Human Service Organizations	4

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3307	Public Policy and Administration	4
HUSV 3900	Introduction to Social Policy	4
Research Methods		
Complete one of the following:		4
POLS 2399	Research Methods in Political Science	
HUSV 3700	Research Methods for Human Services	
Capstone & Elective		
Complete one of the following options.		8
<i>Option A</i>		
Complete POLS 4701 or POLS 4703 and complete one additional Human Services course that has not been used in previous requirements.		
POLS 4701 or POLS 4703	Political Science Senior Capstone Senior Thesis	
HUSV 1000 to HUSV 5999		
<i>Option B</i>		
Complete HUSV 4700 and complete one additional Political Science course numbered 2300 or higher that has not been used in previous requirements.		
HUSV 4700	Senior Seminar in Human Services	
POLS 2300 to POLS 5999		

Political Science and Human Services Combined-Major Credit Requirement

Complete 86 semester hours in the major.

Program Requirement

128 total semester hours required

Political Science and International Affairs, BA

Through this combined major, successful undergraduates will develop an awareness of global affairs and international relations since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social movements; political processes, institutions, and actors; and state-society relations (democracy, authoritarianism, inequalities, citizenship).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Theory		
Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Electives/Concentration for BA

Complete four upper-division political science electives, or complete one of the following concentrations. If you are working toward a concentration, declare it with your advisor in order for it to be added to your record. Requirements for the concentrations are listed below (p. 803).

Code	Title	Hours
Political Science Electives		
Complete four political science courses at or above POLS 2300.		16

- Concentration in Campaigns and Elections (p. 803)
- Concentration in Comparative Politics (p. 803)
- Concentration in Identity, Culture, and Politics (p. 803)
- Concentration in International Relations and Diplomacy (p. 803)
- Concentration in Security Studies (p. 804)

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
HIST 2211	The World Since 1945	4

ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	

Global Dynamics

Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements. One course must be numbered 2000 or above:

Environment

ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	

Law, Diplomacy, and Global Governance

INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Human Rights and Social Justice

INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
HIST 2373	Gender and Sexuality in World History	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
PHIL 1272	Ethics in the World's Religions	
PHIL 5001	Global Justice	

Conflict and Security

CRIM 4630	Political Crime and Terrorism	
HIST 1206	Drug Trade and Drug War: History, Security, Culture	
HIST 3330	The Global Cold War	
JRNL 3300	Covering Conflicts: Peace, War, and the Media	
or INTL 3300	Covering Conflicts: Peace, War, and the Media	
PHIL 5001	Global Justice	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3430	Revolution, Civil War, and Insurrection	

Globalization

INTL 2240	Global Population and Development	
INTL 2300	Religion in International Affairs	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	

INTL 3200	Cities in a Global Context	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
AFAM 2639	Globalism, Racism, and Human Rights	
ANTH 2305	Global Markets and Local Culture	
ANTH 2315	Religion and Modernity	
ECON 1290	History of the Global Economy	
ECON 4635	International Economics	
ENGL 2450	Postcolonial Literature	
HIST 2211	The World Since 1945	
HIST 2311	Colonialism/Imperialism	
INTB 3310	Cultural Aspects of International Business	
LPSC 2302	Global Human Rights: A Social and Economic Perspective	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
SOCL 3465	Globalization and the Evolution of Human Societies	

Population, Migration, and Diaspora

INTL 2240	Global Population and Development	
INTL 2400	Politics of Islam and Gender	
INTL 3200	Cities in a Global Context	
AFRS 1185	Gender in the African Diaspora	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
ANTH 1101	Peoples and Cultures	
ANTH 2350	Urban Anthropology	
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804	
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions	
PHIL 1271	Sex in Judaism, Christianity, and Islam	

Development

INTL 2240	Global Population and Development	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
ANTH 2305	Global Markets and Local Culture	
ECON 1291	Development Economics	
ECON 3404	International Food Economics and Policy	
ENTR 2206	Global Social Enterprise	
ENVR 4515	Sustainable Development	
INTB 1203	International Business and Global Social Responsibility	
or INTB 1209	International Business and Global Social Responsibility	
PHTH 5230	Global Health	
POLS 3487	Politics of Developing Nations	

Communication and Media

COMM 2303	Global and Intercultural Communication	
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INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning

Complete at least one “international semester” via study abroad, international internship, international co-op, or two short-term programs.

Regional Analysis Requirement

Code	Title	Hours
	Complete three of the following, two of which must be in one region. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:	12

Africa

AFRS 2307	Africa Today
AFRS 2465	The Scope and Dynamics of Conflicts in Africa
AFRS 2900	Swahili, Culture, and Politics in Kenya
AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350	Ethnography of Southeast Asia
or INTL 4350	Ethnography of Southeast Asia
ASNS 1150	East Asian Studies
or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism

PHIL 4545	Religion and Politics in South Asia
Europe	
CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500	Latin American Society and Development
or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Requirements

Code	Title	Hours
Capstone		
Complete one of the following:		4
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	
INTL 4700	Senior Capstone Seminar in International Affairs	

Political Science and International Affairs Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3445		
POLS 3450		

POLS 3460		
POLS 3465	Government and Politics in the Middle East	
POLS 3475		
POLS 3480		
POLS 3485		

Experiential/Practicum Requirement

Complete one of the following:		4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	

POLS 3430	Revolution, Civil War, and Insurrection
POLS 3470	Arab-Israeli Conflict
POLS 3487	Politics of Developing Nations
POLS 4918	Model NATO

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	HIST 2211	4	Vacation	0	Vacation	0
MATH 1215	4	POLS 1150	4				
POLS 1155	4	POLS 1151	0				
POLS 1156	0	Foreign language core course	4				
INTL 1101	4	POLS 1160	4				
POLS 1000	1	POLS 1161	0				
		17			16		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1290	4	INTL undergraduate elective	4	Vacation	0	Co-op	0
POLS 2326	4	POLS 2400	4				
POLS undergraduate elective	4	POLS undergraduate elective	4				
Foreign language core course	4	Foreign language core course	4				
		16			16		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL 3400	4	INTL undergraduate elective	4	Co-op	0
		POLS undergraduate elective	4	POLS undergraduate elective	4		
		INTL undergraduate elective	4				
		ENGW 3315	4				
		0			16		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	INTL undergraduate elective	4	Elective	4	Co-op	0
		INTL undergraduate elective	4	Elective	4		
		POLS undergraduate elective	4				
		Elective	4				
		0			16		

Year 5

Fall	Hours	Spring	Hours	
Co-op	0	INTL 4700	4	
		Elective	4	
		Elective	4	
		Elective	4	
		0		

Total Hours: 129

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	HIST 2211	4	Vacation	0	Vacation	0
MATH 1215	4	Foreign language core course	4				
POLS 1155	4	POLS 1150	4				
POLS 1156	0	POLS 1151	0				
INTL 1101	4	POLS 1160	4				
POLS 1000	1	POLS 1161	0				
		17			16		

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ECON 1290	4	Co-op	0	Co-op	0	POLS undergraduate elective	4
POLS 2326	4					INTL undergraduate elective	4
Foreign language core course	4						
POLS undergraduate elective	4						
		16			0		

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL undergraduate elective	4	Co-op	0	Co-op	0	INTL undergraduate elective	4
POLS 2400	4					POLS undergraduate elective	4
POLS undergraduate elective	4						
Foreign language core course	4						
		16			0		

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
INTL 3400	4	Co-op	0	Co-op	0	Vacation	0
POLS undergraduate elective	4						

INTL undergraduate elective	4			
ENGW 3315	4			
	16	0	0	0

Year 5

Fall	Hours	Spring	Hours
INTL undergraduate elective	4	INTL 4700	4
POLS undergraduate elective	4	Elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 129

Political Science and Philosophy, BA

The combined major in political science and philosophy enables students to develop an integrated understanding of politics, political theory, ethical theory, and theories of justice. Successful students who complete the major will have the training to critically evaluate and assess public policies and social issues on both political and ethical grounds, including issues such as tax policy, immigration, environmental protection, trade policy, healthcare, education, defense policy, and much more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4

POLS 2399	Research Methods in Political Science	4
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Political Thought/Theory

Complete two of the following: 8

POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Upper-Division Electives

Complete two courses in the following range: 8

POLS 3000 to POLS 5999

Political Science Electives

Complete two courses in the following range: 8

POLS 2000 to POLS 5999

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 844).

- Campaigns and Elections (p. 844)
- Identity, Culture, and Politics (p. 844)
- International Relations and Diplomacy (p. 844)
- Law and Legal Studies (p. 844)
- Public Policy (p. 844)

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
or POLS 2325	Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4
Philosophy Restricted Electives		
Complete two of the following: 8		
PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete four additional electives in philosophy or religion. 16

Integrative Requirement

Code	Title	Hours
Complete the following:		
PHIL 5001	Global Justice	4

Program Requirement

128 semester hours required

Concentrations**CONCENTRATION IN CAMPAIGNS AND ELECTIONS**

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following:		
POLS 2345	Urban Policies and Politics	8
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	8
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		
POLS 2360	Politics of Poverty	12
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		
POLS 4910	Model United Nations	4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following:		
POLS 3405	International Political Economy	12

POLS 3406	International Law
POLS 3407	International Organizations
POLS 3408	International Security
POLS 3435	Politics and Governance of Europe and the European Union
POLS 3470	Arab-Israeli Conflict

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 2330	American Political Thought	16
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		
POLS 2334	Bureaucracy and Government Organizations	12
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Sociology and Political Science, BA

The combined major in sociology and political science offers students the opportunity to integrate the study of politics and government with an analysis of social systems. Students complete core courses in political science along with core courses in sociology that include social theory and an introduction to social systems. This combined major highlights the important intersection between social norms and organizations with the evolution of politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Sociology Requirements

Code	Title	Hours
Sociology Required Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
Sociology Introductory Electives		
Complete two courses in the following range:		8
SOCL 1200 to SOCL 1999		
Sociology Intermediate Elective		
Complete one course in the following range:		4
SOCL 2000 to SOCL 3999		
Sociology Advanced Elective		
Complete one course in the following range:		4
SOCL 4000 to SOCL 5999		
Statistics and Methods		
Complete one of the following sets:		8
SOCL 2320 and SOCL 2321	Statistical Analysis in Sociology and Research Methods in Sociology	
POLS 2400 and POLS 2399	Quantitative Techniques and Research Methods in Political Science	

Political Science Requirements

Code	Title	Hours
Political Science Required Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2330	American Political Thought	4
Political Science Electives		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3418	Nationalism	
Political Science Upper-Level Electives		
Complete two courses in the following range:		8
POLS 3000 to POLS 5999		
Political Science Electives		
Complete two courses in the following range:		8
POLS 2300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 889).

- American Political Institutions
- Campaigns and Elections
- Identity, Culture, and Politics
- Public Policy

Capstone Requirement

Code	Title	Hours
Complete one of the following:		4
SOCL 4600	Senior Seminar	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Integrative Requirement

Code	Title	Hours
SOCL 4514	“The Wire” and the Study of Urban Inequalities	4
POLS 3324	Law and Society	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Concentrations (Optional)

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	

POLS 3402

POLS 3304

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Political Science, BS

The Bachelor of Science in Political Science provides a set of introductory courses to the discipline, followed by methodology courses, electives, and a capstone course. Students explore and analyze the many facets of American government, comparative politics, international relations, and political philosophy. With elective courses, students may choose from among a number of concentrations or follow their own curricular path.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Introduction to College

Complete "Introduction to College" for your major.

Political Science Major Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Theory		
Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Capstone		
POLS 4701	Political Science Senior Capstone	4
or POLS 4703	Senior Thesis	

Political Science Experiential Learning Requirement

Code	Title	Hours
Note: Up to two credit-bearing courses count toward political science electives.		
Complete one course or experience from the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4942	Internship in Politics	

Co-op or Study Abroad

Complete one cooperative education experience or one study-abroad experience.	4
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Political Science Electives

Note: You may use four courses from the elective area to fulfill a concentration.

Code	Title	Hours
Complete eight political science electives with a minimum of six numbered 2000 or above.		32

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 891).

- American Political Institutions (p. 891)
- Campaigns and Elections (p. 891)
- Comparative Politics (p. 891)
- Identity, Culture, and Politics (p. 891)
- International Relations and Diplomacy (p. 891)
- Law and Legal Studies (p. 891)

- Public Policy (p. 892)
- Security Studies (p. 892)

Political Science Major Credit Requirement

Complete 60 semester hours in the major.

Upper-Division Electives

Code	Title	Hours
Note: Courses used as upper-division electives do not count toward the major or the NU Core.		
Complete three general electives numbered 3000 or above.		12

Program Requirements

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		
POLS 2350	State and Local Politics	16
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	8
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN COMPARATIVE POLITICS

Code	Title	Hours
Theoretical Requirement		
Complete one of the following:		4
POLS 2370	Religion and Politics	4
POLS 3418	Nationalism	
POLS 3427	Civil-Military Relations	
POLS 3487	Politics of Developing Nations	
Regional Requirements		
Complete two of the following:		8

POLS 3435	Politics and Governance of Europe and the European Union	4	
POLS 3445			
POLS 3450			
POLS 3460			
POLS 3465	Government and Politics in the Middle East		
POLS 3475			
POLS 3480			
POLS 3485			
Experiential/Practicum Requirement			
Complete one of the following:			4
POLS 4915	Model Arab League	4	
POLS 4918	Model NATO		
POLS 4937	Dialogue of Civilizations: Government and Politics Abroad		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	12
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	4
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following:		12
POLS 3405	International Political Economy	12
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		
POLS 2330	American Political Thought	16
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	

POLS 3324	Law and Society
POLS 3406	International Law
POLS 4500	U.S. Constitutional Law
POLS 4505	U.S. Civil Liberties

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
POLS 1155	4	POLS 1150	4	Vacation	0
POLS 1156	0	POLS 1151	0		
Elective	4	MATH 1215	4		
Elective	4	Elective	4		
POLS 1000	1	POLS 1160	4		
ENGW 1111	4	POLS 1161	0		
		17			0

Year 2					
Fall	Hours	Spring	Hours	Summer 1	Hours
POLS 2399	4	POLS 2400	4	Vacation	0
				Co-op	0

POLS intermediate/advanced undergraduate elective	4	Elective	4		
Elective	4	POLS intermediate/advanced undergraduate elective	4		
Elective	4	Elective	4		
EESH 2000	1	EESH 2000	1		
		17	17	0	0

Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Political theory course	4	POLS intermediate/advanced undergraduate elective	4	Co-op
		POLS intermediate/advanced undergraduate elective	4	Elective	4	
		Elective	4			
		Elective	4			
		0	16	8	0	

Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	ENGW 3315	4	Upper-division elective	4	Co-op
		POLS intermediate/advanced undergraduate elective	4	POLS intermediate/advanced undergraduate elective	4	
		Upper-division elective	4			
		Elective	4			
		0	16	8	0	

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	POLS 4701	4
		POLS intermediate/advanced undergraduate elective	4
		Upper-division elective	4
		Elective	4
		0	16

Total Hours: 131

Five Years, Three Co-ops in Spring/Summer 1

Year 1								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
POLS 1155	4	POLS 1150	4	Vacation	0	Vacation	0	
POLS 1156	0	POLS 1151	0					
Elective	4	MATH 1215	4					
Elective	4	Elective	4					
POLS 1000	1	POLS 1160	4					
ENGW 1111	4	POLS 1161	0					
		17			16			0

Year 2								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
POLS 2399	4	Co-op	0	Co-op	0	Elective	4	
Elective	4					Elective	4	
POLS intermediate/advanced undergraduate elective	4							
POLS intermediate/advanced undergraduate elective	4							
EESH 2000	1							
		17			0			0

Year 3								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
Political theory course	4	Co-op	0	Co-op	0	POLS intermediate/advanced undergraduate elective	4	
Elective	4					Elective	4	
Elective	4							
POLS 2400	4							
		16			0			0

Year 4								
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours	
ENGW 3315	4	Co-op	0	Co-op	0	Vacation	0	
POLS intermediate/advanced undergraduate elective	4							
Upper-division elective	4							
Elective	4							
		16			0			0

Year 5			
Fall	Hours	Spring	Hours
POLS intermediate/advanced undergraduate elective	4	POLS 4701	4

POLS intermediate/advanced undergraduate elective	4	POLS intermediate/advanced undergraduate elective	4
Upper-division elective	4	Upper-division elective	4
Elective	4	Elective	4
		16	16

Total Hours: 130

Biology and Political Science, BS

In the BS, combined biology and political science degree program, science courses lay the groundwork for strong basic training in mathematics, chemistry, and physics that are relevant to biology. In biology courses, students broadly explore the organization and processes of life—from molecules and cells through organs and organ systems to populations, ecosystems, and evolution. In political science courses, students pursue core concepts of American government, comparative politics, international relations and political thought. Course work in quantitative techniques is also required. Students choose from a range of advanced subject electives. An appreciation of the intersection of biology and political science is provided through advanced courses in science, technology and public policy, and in environmental politics and policy.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Biology Requirements

Code	Title	Hours
Introduction to College		
BIOL 1000 or POLS 1000	Biology at Northeastern Political Science at Northeastern	1
Biology		
<i>Foundations</i>		
BIOL 1107 and BIOL 1108	Foundations of Biology and Lab for BIOL 1107	5
<i>Inquiries</i>		
BIOL 2299	Inquiries in Biological Sciences	4
<i>Genetics</i>		

BIOL 2301 and BIOL 2302 <i>Project Lab</i>	Genetics and Molecular Biology and Lab for BIOL 2301	5
BIOL 2309 <i>Biochemistry</i>	Biology Project Lab	4
BIOL 3611 and BIOL 3612 <i>Organismal and Population Biology Elective</i>	Biochemistry and Lab for BIOL 3611	5
Complete one of the following:		4-5
BIOL 2321 and BIOL 2322	Microbiology and Lab for BIOL 2321	
BIOL 2327	Human Parasitology	
BIOL 3401	Comparative Vertebrate Anatomy	
EEMB 2302 and EEMB 2303	Ecology and Lab for EEMB 2302	
EEMB 2400	Introduction to Evolution	
EEMB 2616 and EEMB 2617	Invertebrate Zoology and Lab for EEMB 2616	
EEMB 2700 and EEMB 2701	Marine Biology and Lab for EEMB 2700	

Mathematics

MATH 1251	Calculus and Differential Equations for Biology 1	4
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Chemistry*General Chemistry*

CHEM 1161 and CHEM 1162 and CHEM 1163	General Chemistry for the Biological Sciences and Lab for CHEM 1161 and Recitation for CHEM 1161	5
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Organic Chemistry

CHEM 2311 and CHEM 2312	Organic Chemistry 1 and Lab for CHEM 2311	5
CHEM 2313 and CHEM 2314	Organic Chemistry 2 and Lab for CHEM 2313	5

Physics

PHYS 1145 and PHYS 1146	Physics for Life Sciences 1 and Lab for PHYS 1145	5
PHYS 1147 and PHYS 1148	Physics for Life Sciences 2 and Lab for PHYS 1147	5

Intermediate or Advanced Science

Complete one course from the following:		4
BIOL 2301 to BIOL 5999		
CHEM 2311 to CHEM 5999		
EEMB 2290 to EEMB 5999		
ENVR 2310 to ENVR 5999		
MATH 2280 to MATH 5999		
PHYS 2303 to PHYS 5999		
PSYC 2290 to PSYC 5999		

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4

Statistics

Complete one of the following:		4-5
POLS 2400	Quantitative Techniques	
ENVR 2500 and ENVR 2501	Biostatistics and Lab for ENVR 2500	

Political Thought

Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Upper-Division Electives

Complete four of the following:		16
POLS 2340	Business and Government	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 2399	Research Methods in Political Science	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

Political Science Elective

Complete one additional course in political science numbered 2300 or above.		4
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Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p.).

- Law and legal studies
- Public policy
- Security studies

Integrative Requirement and Capstone

Note: Science, Technology, and Public Policy (POLS 2390) cannot be used both as an integrative course and as an elective above.

Code	Title	Hours
Integrative Requirement		
POLS 2390 or POLS 2395	Science, Technology, and Public Policy Environmental Politics and Policy	4
Capstone		
BIOL 4701 or POLS 4701	Biology Capstone Political Science Senior Capstone	4

Program Requirement

136 total semester hours required

Concentrations**CONCENTRATION IN LAW AND LEGAL STUDIES**

Code	Title	Hours
Complete four of the following:		
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	

POLS 4500	U.S. Constitutional Law
POLS 4505	U.S. Civil Liberties

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Political Science and Business Administration, BS

The combined major in political science and business administration offers students the opportunity to integrate the study of politics and government with an analysis of business practices and organizations. Students complete core courses in political science along with core courses in business administration that cover accounting, finance, marketing, and organizational behavior. This combined major highlights the important intersection between business practices and the evolution of politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Introduction to College		
POLS 1000	Political Science at Northeastern	1
or BUSN 1102	Personal Skill Development for Business	

Political Science Requirements

POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4

Political Theory

Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Restricted Electives

Complete two of the following:		8
POLS 3307	Public Policy and Administration	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	

Statistics

POLS 2400	Quantitative Techniques	4
or MGSC 2301	Business Statistics	

Political Science Electives

Complete two courses in the following range, or complete a political science concentration as outlined below:		8
POLS 3300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 258).

- American Political Institutions (p. 258)
- Identity, Culture, and Politics (p. 259)
- Law and Legal Studies (p. 259)

Business Requirements

Code	Title	Hours
Accounting		
ACCT 1201	Financial Accounting and Reporting	4
ACCT 2301	Managerial Accounting	4
Finance		
FINA 2201	Financial Management	4

Marketing

MKTG 2201	Introduction to Marketing	4
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Organizational Behavior

ORGB 3201	Organizational Behavior	4
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Business Concentration

Complete one of the following business concentrations. Requirements for the concentrations are listed below (p. 257).

- Accounting (p. 257)
- Entrepreneurship and Innovation (p. 257)
- Finance (p. 257)
- Management (p. 258)
- Management Information Systems (p. 258)
- Marketing (p. 258)
- Supply Chain Management (p. 258)

Supporting Courses

Code	Title	Hours
Mathematics		
MATH 1231	Calculus for Business and Economics	4
or MATH 1341	Calculus 1 for Science and Engineering	
Economics		
ECON 1115	Principles of Macroeconomics	4
or ECON 1116	Principles of Microeconomics	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Co-op Preparation		
BUSN 1103	Professional Development for Business Co-op	1
or EESH 2000	Professional Development for Co-op	

Integrative Requirement

Code	Title	Hours
Senior Capstone		
POLS 4701	Political Science Senior Capstone	4
or STRT 4501	Strategy in Action	
The following course is fulfilled through the political science requirement:		
POLS 1160		

Business Cooperative Education Requirement

Complete one six-month co-op experience.

Political Science GPA Requirement

Minimum 2.000 GPA required in all political science courses

Business GPA Requirement

Minimum 2.000 GPA required in business courses

Program Requirement

128 total semester hours required

Business Concentrations**CONCENTRATION IN ACCOUNTING**

Code	Title	Hours
Required Courses		
ACCT 3401	Financial Reporting and Analysis 1	4
ACCT 4501	Financial Reporting and Analysis 2	4
Electives		
Complete two of the following:		8
ACCT 3403	Accounting Information Systems	
ACCT 3416	Strategic Cost Analysis for Decision Making	
ACCT 4412	Auditing and Other Assurance Services	
ACCT 4414	Income Tax Determination and Planning	

CONCENTRATION IN ENTREPRENEURSHIP AND INNOVATION

Code	Title	Hours
Note: The following courses do not count toward this concentration:		
ENTR 1201	The Entrepreneurial Universe	
ENTR 3308	Business Economic History of South Africa	
ENTR 3318		
ENTR 3328		
ENTR 3338	Field Research in Sustainable Energy in Iceland	
ENTR 3346		
ENTR 4510	Management Consulting Abroad	
ENTR 4514	Development Practice and Global Citizenship in India	
Introductory Course		
ENTR 2301	Innovation!	4
or ENTR 2303	Entrepreneurial Marketing and Selling	
Capstone Course		
Complete one of the following:		4
ENTR 4501	Business Planning for Technology Ventures	
ENTR 4503	Business Planning for Small and Medium Enterprises	
ENTR 4505	Entrepreneurial Growth Strategy for Technology Ventures	
ENTR 4506	Advanced Studies in Social Enterprise	
Electives		
Note: Only one non-ENTR course may be used as an elective.		
Complete two of the following:		8
ENTR 2206	Global Social Enterprise	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 2301	Innovation! (if not used as introductory course)	
ENTR 2303	Entrepreneurial Marketing and Selling (if not used for introductory course)	
ENTR 3212	Innovation for Social Change	
ENTR 3217	Global Family Business Leadership	

ENTR 3220	International Entrepreneurship and Innovation Consulting	
ENTR 3305	Entrepreneurial Strategy and Business Model Design	
ENTR 3306	Global Entrepreneurship	
ENTR 3330	Lean Design and Development for Entrepreneurs	
ENTR 3401	Management of Operations and Growth in Small- and Medium-Sized Enterprises	
ENTR 3403	Managing Operations in a Technology-Based Startup Firm	
ENTR 3520	Impact Investing and Social Finance	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
ENTR 4512	Social Entrepreneurship and Sustainable Development in India	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
MGMT 3302	Negotiating in Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Course		
FINA 3301 or FINA 3303	Corporate Finance Investments	4
Electives		
Complete three of the following:		12
ENTR 3520 or FINA 2720	Impact Investing and Social Finance Sustainability in the Business Environment	
FINA 3301	Corporate Finance (if not selected as a required course)	
FINA 3303	Investments (if not selected as a required course)	
FINA 4219	Portfolio Management	
FINA 4220	Behavioral Finance	
FINA 4310	Working Capital Management	
FINA 4312	Issues in Corporate Governance	
FINA 4320	International Financial Management	
FINA 4410	Valuation and Value Creation	
FINA 4412	Personal Financial Planning	
FINA 4420	Mergers and Acquisitions	
FINA 4512	Financial Risk Management	
FINA 4514	Investment Banking	
FINA 4516	Real Estate Finance	
FINA 4524	Credit Analysis	
FINA 4526	Core Topics in Alternative Investments	
FINA 4983	Special Topics in Finance	
FINA 4602	Turnaround Management	
FINA 4604	Fixed-Income Securities	
FINA 4608	Advanced Financial Strategy	
FINA 4610	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MANAGEMENT

Code	Title	Hours
Required Course		
MGMT 4501	Skills for Managerial Success	4
Electives		
Note: Only one non-MGMT course may be used as an elective.		
Complete three of the following:		12
MGMT 3302	Negotiating in Business	
MGMT 3315	Managing Organizational Change and Disruption	
MGMT 3330	Developing Leaders for Global Sustainability	
MGMT 3340	Managing Healthcare Organizations: Critical Challenges and New Approaches	
MGMT 3350	Managing a Diverse Workforce	
MGMT 3360	Law and the Legal Process	
MGMT 3420	Managing Human Capital	
MGMT 3510	Managing Global Teams Virtually and Locally	
MGMT 3530	Project Management	
MGMT 4310	The Management Practices of Great Organizations	
MGMT 4410	Human Resources and Workforce Analytics	
ENTR 2215	Understanding Family Enterprise	
ENTR 2414	Social Responsibility of Business in an Age of Inequality	
ENTR 4225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	

CONCENTRATION IN MANAGEMENT INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
MISM 3403	Data Management in the Enterprise	4
MISM 4501	Business Systems Integration	4
Electives		
Note: Only one non-MISM course may be used as an elective.		
Complete two of the following:		8
MISM 2510	Fundamentals of Information Analytics	
MISM 3305	Information Resource Management	
MISM 3404	Data Communications	
MISM 3406	Introduction to Web Design, Practices, and Standards	
MISM 3501	Information Visualization for Business	
MISM 3515	Data Mining for Business	
MKTG 4508	Digital Marketing	
SCHM 3301	Global Supply Chain Strategy	
SCHM 3305	Sourcing and Procurement	
SCHM 3308	Supply Chain Analytics	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Courses		
MKTG 3401	Marketing Research	4
MKTG 3301	Marketing Management	4
or MKTG 4506	Consumer Behavior	
Electives		
Complete two of the following:		8
MKTG 2301	Marketing and Society	
MKTG 3301	Marketing Management (if not selected as a required course)	
MKTG 3501	Marketing Analytics	
MKTG 4220	Marketing in Asia	
MKTG 4420	Sales Management	
MKTG 4502	Marketing in the Service Sector	
MKTG 4504	Advertising and Brand Promotion	
MKTG 4506	Consumer Behavior (if not selected as a required course)	
MKTG 4508	Digital Marketing	
MKTG 4510	New Product Development	
MKTG 4512	International Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Courses		
SCHM 3301	Global Supply Chain Strategy	4
SCHM 3305	Sourcing and Procurement	4
SCHM 3310	Logistics and Transportation Management	4
Elective		
Complete one of the following:		4
SCHM 3308	Supply Chain Analytics	
SCHM 3320	Demand Planning and Forecasting	
SCHM 3330	Sustainability and Supply Chain Management	
SCHM 4401	Advanced Problems in Supply Chain Management	

Political Science Concentrations (Optional)**CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS**

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		

Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Political Science and Communication Studies, BS

The combined major in political science and communication studies offers students the opportunity to integrate the study of politics and government with different forms and mediums of communication. Students complete core courses in political science along with core courses in communication studies that cover public speaking and persuasion. This combined major highlights the important role played by different forms of communication in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
Political Thought		

Complete one of the following: 4

POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Methodology

POLS 2399	Research Methods in Political Science	4
or COMM 2301	Communication Research Methods	

Political Science Upper-Division Electives

Complete two courses in the following range: 8

POLS 3300 to POLS 5999		
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Political Science Electives

Complete two courses in the following range: 8

POLS 2000 to POLS 5999		
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Political Science Concentration (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 157).

- American Political Institutions (p. 157)
- Campaigns and Elections (p. 157)
- Identity, Culture, and Politics (p. 157)
- Law and Legal Studies (p. 157)
- Public Policy (p. 157)

Communication Studies Courses

Code	Title	Hours
Core Courses in Political Communication		
COMM 1101	Introduction to Communication Studies	4
COMM 1112	Public Speaking	4
COMM 1210	Persuasion and Rhetoric	4
Communication Studies Electives		
Complete six of the following:		24
COMM 1231	Principles of Organizational Communication	
COMM 1331	Legal Argumentation, Advocacy, and Citizenship	
COMM 1412	Social Movement Communication	
COMM 2301	Communication Research Methods	
COMM 2303	Global and Intercultural Communication	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
COMM 3201	Health Communication	
COMM 3304	Communication and Inclusion	
COMM 3409	Advocacy Writing	
COMM 3414	Great Speakers and Speeches 2, 1930–Present	
COMM 3415	Communication Criticism	
COMM 3451	Advertising Practices	
COMM 3501	Free Speech: Law and Practice	
COMM 3532	Theories of Conflict and Negotiation	
COMM 3610	Communication, Politics, and Social Change	
COMM 4102	Health Communication Campaigns	

COMM 4602	Contemporary Rhetorical Theory	
COMM 4625	Online Communities	
COMM 4631	Crisis Communication and Image Management	
COMM 4992	Directed Study	
COMM 4994	Internship in Communication	

Integrative Requirements

Code	Title	Hours
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Integrative Courses

POLS 3320	Politics and Mass Media	4
or COMM 3320	Political Communication	
POLS 2333		4

Capstone Requirement

Complete one of the following. This course also counts toward the political science or communication studies elective requirement: 4

COMM 4102	Health Communication Campaigns	
COMM 4530	Communication and Quality of Life	
COMM 4602	Contemporary Rhetorical Theory	
COMM 4625	Online Communities	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Political Science and Communication Studies Combined-Major Credit Requirement

Complete 72 semester hours in the major.

Program Requirements

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
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Required Courses

With advisor approval, a co-op or internship may be substituted in place of POLS 4947:

POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following: 8

POLS 2345	Urban Policies and Politics	
POLS 2355		

POLS 3310	Public Opinion, Voting, and Elections
POLS 3162	Local Campaigns and Elections
POLS 3320	Politics and Mass Media
POLS 3402	
POLS 3304	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Criminal Justice and Political Science, BS

This combined major educates students in criminal justice and political science and in the interface between the two disciplines. The scope and sequence of political science courses provide students with a foundation in topics such as American government, comparative politics,

international relations, and security and resilience. Criminal justice courses provide a foundation for understanding individual and systemic aspects of criminology and criminal justice. Students completing this program should be able to understand the relationships between the fields as they relate to understanding and addressing criminal behavior.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Criminal Justice Requirements

Code	Title	Hours
Criminal Justice Core Requirements		
CRIM 1100	Introduction to Criminal Justice	4
CRIM 2100	Criminal Due Process	4
CRIM 2200	Criminology	4
Thematic Electives		
Complete one of the following:		4
CRIM 1300	The Death Penalty	
CRIM 1400	Human Trafficking	
CRIM 1500	Corruption, Integrity, and Accountability	
CRIM 1700	Crime, Media, and Politics	
Survey Elective		
Complete one of the following:		4
CRIM 3010 to CRIM 3500		
System-Wide Elective		
Complete one of the following:		4
CRIM 4010	Gender, Crime, and Justice	
CRIM 4020	Race, Crime, and Justice	
Computer Science		
CS 1100	Computer Science and Its Applications	4
Mathematics		
Complete one of the following:		4
MATH 1215	Mathematical Thinking	
MATH 1231	Calculus for Business and Economics	
MATH 1241	Calculus 1	

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4

POLS 1160	International Relations	4
Political Theory		
Complete one of the following:		4
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Research Methods and Electives

Complete Option A, Option B, or Option C, below. *Note:* These options enable the student to take research methods courses (including statistics/quantitative techniques) as either CRIM courses or as POLS courses.

OPTION A

Code	Title	Hours
<i>Research Methods</i>		
CRIM 3600	Criminal Justice Research Methods	4
CRIM 3700	Criminal Justice Statistics	4
<i>Criminal Justice Electives</i>		
Complete two courses in the following range:		8
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete five courses in the following range:		20
POLS 2300 to POLS 5999		

OPTION B

Code	Title	Hours
<i>Research Methods</i>		
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
<i>Criminal Justice Electives</i>		
Complete three courses in the following range:		12
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete four courses in the following range:		20
POLS 2300 to POLS 5999		

OPTION C

Code	Title	Hours
<i>Research Methods</i>		
Complete one of the following sequences:		8
CRIM 3600 and POLS 2400	Criminal Justice Research Methods and Quantitative Techniques	
CRIM 3700 and POLS 2399	Criminal Justice Statistics and Research Methods in Political Science	
<i>Criminal Justice Electives</i>		
Complete two courses in the following range:		8
CRIM 4001 to CRIM 4999		
<i>Political Science Electives</i>		
Complete four courses in the following range:		20
POLS 2300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 643).

- American Political Institutions (p. 643)
- Campaigns and Elections (p. 643)
- Identity, Culture, and Politics (p. 643)
- Law and Legal Studies (p. 643)
- Security Studies (p. 643)

Integrative Requirement

Code	Title	Hours
Senior Capstone Requirement		
CRIM 4949 or POLS 4701	Senior Capstone Seminar Political Science Senior Capstone	4
Due Process		
CRIM 2100	Criminal Due Process	4
Integrative Elective Courses		
Complete two of the following:		8
CRIM 3100	Criminal Law	
CRIM 4100	Juvenile Law	
CRIM 4120	Courts and Sentencing	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

Combined-Major Credit Requirement

Complete 84 semester hours in the major.

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		16
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	

POLS 3162	Local Campaigns and Elections
POLS 3320	Politics and Mass Media
POLS 3402	
POLS 3304	

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following:		12
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN SECURITY STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3423	Terrorism and Counterterrorism	
POLS 3425	U.S. Foreign Policy	
POLS 3427	Civil-Military Relations	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4918	Model NATO	

Political Science and Economics, BS

The combined major in political science and economics offers students the opportunity to integrate the study of politics and government with the study of economics. Students complete the core courses in political science along with core courses in economics that cover both macroeconomic and microeconomic perspectives. This combined major highlights the important role that the economy plays in shaping politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
Political Theory		
Complete one of the following:		4
POLS 2330	American Political Thought	
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Restricted Electives		
Complete two of the following:		8
POLS 3307	Public Policy and Administration	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2360	Politics of Poverty	
POLS 3405	International Political Economy	
POLS 3487	Politics of Developing Nations	

Political Science Electives

Complete two courses from the following range, or complete a concentration as outlined below: 8
POLS 3300 to POLS 5999

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 687).

- American Political Institutions (p. 687)
- Campaigns and Elections (p. 687)
- International Relations and Diplomacy (p. 687)
- Public Policy (p. 687)

Economics Requirements for BS

Code	Title	Hours
Breadth Courses		
MATH 1231	Calculus for Business and Economics	4
CS 1100	Computer Science and Its Applications	4
Required Economics Courses		
Grades in the required economics courses and in Quantitative Techniques (POLS 2400) or Statistics (ECON 2350) must average a minimum of 2.000:		
ECON 1115	Principles of Macroeconomics	4
ECON 1116	Principles of Microeconomics	4
ECON 2315	Macroeconomic Theory	4
ECON 2316	Microeconomic Theory	4
ECON 2560	Applied Econometrics	4

Economics Electives

Complete three economics electives with no more than one below 2990.

Supporting Courses

Complete either of the statistics and departmental elective combinations listed below:

COMBINATION A

Code	Title	Hours
Statistics		
POLS 2400	Quantitative Techniques	4
Economics		
Complete one of the following:		4
ECON 3404	International Food Economics and Policy	
ECON 3420	Urban Economic Issues	
ECON 3423	Environmental Economics	
ECON 3425	Energy Economics	
ECON 3440	Public Finance	
ECON 3490	Public Choice Economics	
ECON 4634	Comparative Economics	
ECON 4635	International Economics	

COMBINATION B

Code	Title	Hours
Statistics		
ECON 2350	Statistics	4
Political Science		
Complete one course in the following range:		4
POLS 2401 to POLS 5999		

Integrative Requirements

Code	Title	Hours
Senior Seminar/Capstone		
Complete one of the following:		4
ECON 4692	Senior Economics Seminar	
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Program Requirement

128 total semester hours required

Concentrations

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following:		
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4

Campaigns and Elections Electives

If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.

Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following:		4
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	

Core Courses

Complete three of the following:		12
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4

Electives

Complete three of the following:	12
POLS 2334	Bureaucracy and Government Organizations
POLS 2335	Budgeting and Taxation
POLS 2340	Business and Government
POLS 2345	Urban Policies and Politics
POLS 2350	State and Local Politics
POLS 2357	Growth and Decline of Cities and Suburbs
POLS 2390	Science, Technology, and Public Policy
POLS 2395	Environmental Politics and Policy
POLS 3425	U.S. Foreign Policy

Plan of Study
Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 1111	4	MATH 1231	4	Vacation	0	Vacation	0
POLS 1155	4	POLS 1150	4				
POLS 1156	0	POLS 1151	0				
ECON 1115	4	CS 1100	4				
Elective	4	ECON 1116	4				
	16		16		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
POLS 1160	4	POLS 2400	4	Vacation	0	Vacation	0
POLS 1161	0	ECON 2315	4				
ECON undergraduate elective	4	POLS undergraduate elective	4				
POLS undergraduate elective	4	Elective	4				
Elective	4						
	16		16		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Elective	4	Vacation	0	Vacation	0
ECON 2316	4	POLS intermediate/advanced undergraduate elective	4				
Political Theory course	4	Elective	4				
ECON undergraduate elective	4	Elective	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
ECON 2560	4	POLS 4701	4

POLS intermediate/advanced undergraduate elective	4	ECON intermediate/advanced undergraduate elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 128

Political Science and Human Services, BS

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4

Political Thought		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Electives	
Complete three courses in the following range:	12
POLS 2330 to POLS 5999	
Total Hours	32

Supporting Course for Political Science

Code	Title	Hours
Mathematics		
Complete one of the following to fulfill the prerequisite for POLS 2400		4
MATH 1213	Interactive Mathematics	
MATH 1215	Mathematical Thinking	

MATH 1231	Calculus for Business and Economics
MATH 1241	Calculus 1

Human Services Requirements

Code	Title	Hours
Required Courses		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
Human Services Internship		
HUSV 4994	Human Services Internship	6
Human Services & Diverse Populations		
Complete one of the following:		4
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	
HUSV 2800	Sexual Orientation and Gender Expression in Practice and Policy	
HUSV 4866	Intercultural Studies through Human Services	
Human Services Electives		
Complete two HUSV courses.		8
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Total Hours		34

Supporting Course for Human Services

Code	Title	Hours
Organization		
SOCL 3440	Sociology of Human Service Organizations	4

Integrative Requirements

Code	Title	Hours
Integrative Courses		
POLS 3307	Public Policy and Administration	4
HUSV 3900	Introduction to Social Policy	4
Research Methods		
Complete one of the following:		4
POLS 2399	Research Methods in Political Science	
HUSV 3700	Research Methods for Human Services	
Capstone & Elective		
Complete one of the following options.		8
<i>Option A</i>		
Complete POLS 4701 or POLS 4703 and complete one additional Human Services course that has not been used in previous requirements.		
POLS 4701	Political Science Senior Capstone	
or POLS 4703	Senior Thesis	
HUSV 1000 to HUSV 5999		
<i>Option B</i>		
Complete HUSV 4700 and complete one additional Political Science course numbered 2300 or higher that has not been used in previous requirements.		

HUSV 4700	Senior Seminar in Human Services
POLS 2300 to POLS 5999	

Political Science and Human Services Combined-Major Credit Requirement

Complete 86 semester hours in the major.

Program Requirement

128 total semester hours required

Political Science and Philosophy, BS

The combined major in political science and philosophy enables students to develop an integrated understanding of politics, political theory, ethical theory, and theories of justice. Students who complete the major will have the training to critically evaluate and assess public policies and social issues on both political and ethical grounds, including issues such as tax policy, immigration, environmental protection, trade policy, healthcare, education, defense policy, and much more.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Political Science Requirements

Code	Title	Hours
Core Courses in Political Science		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2400	Quantitative Techniques	4
POLS 2399	Research Methods in Political Science	4
Political Thought/Theory		
Complete two of the following:		8
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	
Political Science Upper-Division Electives		
Complete two courses in the following range:		8
POLS 3000 to POLS 5999		
Political Science Electives		

Complete two courses in the following range: 8

POLS 2000 to POLS 5999

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 860).

- Campaigns and Elections (p. 860)
- Identity, Culture, and Politics (p. 860)
- International Relations and Diplomacy (p. 860)
- Law and Legal Studies (p. 860)
- Public Policy (p. 860)

Philosophy Requirements

Code	Title	Hours
Philosophy Required Courses		
PHIL 1115	Introduction to Logic	4
PHIL 2325	Ancient Philosophy and Political Thought	4
	or POLS 2325 Ancient Philosophy and Political Thought	
PHIL 2330	Modern Philosophy	4

Philosophy Restricted Electives

Complete two courses from the following with one course at the 4000 or 5000 level: 8

PHIL 3343	Existentialism	
PHIL 3435	Moral Philosophy	
PHIL 3460	Philosophy and Literature	
PHIL 4390	Cults and Sects	
PHIL 4500	Theory of Knowledge	
PHIL 4510	Philosophy of Science	
PHIL 4515	Advanced Logic	
PHIL 4535	Philosophy of Mind	
PHIL 4547	Seminar: Apocalypticism	
PHIL 4550	Philosophy of Economics	
PHIL 4606	Seminar: Theories and Methods in Religious Studies	
PHIL 4903	Seminar in Religion	
PHIL 4906	Topics in Religious Studies	
PHIL 5001	Global Justice	
PHIL 5011	Comparative Religious Ethics	

Additional Electives

Complete four additional electives in philosophy or religion. 16

Integrative Requirement

Code	Title	Hours
PHIL 5001	Global Justice	4

Program Requirement

128 semester hours required

Concentrations

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following: 8		
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following: 12		
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN INTERNATIONAL RELATIONS AND DIPLOMACY

Code	Title	Hours
Experiential/Practicum Requirement		
Complete one of the following: 4		
POLS 4910	Model United Nations	
POLS 4915	Model Arab League	
POLS 4918	Model NATO	
POLS 4938	Dialogue of Civilizations: International Politics Abroad	
Core Courses		
Complete three of the following: 12		
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 3408	International Security	
POLS 3435	Politics and Governance of Europe and the European Union	
POLS 3470	Arab-Israeli Conflict	

CONCENTRATION IN LAW AND LEGAL STUDIES

Code	Title	Hours
Complete four of the following:		16
POLS 2330	American Political Thought	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3324	Law and Society	
POLS 3406	International Law	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following:		12
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 2357	Growth and Decline of Cities and Suburbs	
POLS 2390	Science, Technology, and Public Policy	
POLS 2395	Environmental Politics and Policy	
POLS 3425	U.S. Foreign Policy	

Computer Science and Political Science, BS

The computer science and political science combined major offers both a strong computer science foundation and a deep understanding of global and societal needs. You will become an engaged citizen of the world, participating in interdisciplinary scholarship and translational research to address regional and global issues.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C– or higher is required in computer science fundamental courses.

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5
CS 2800 and CS 2801	Logic and Computation and Lab for CS 2800	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of upper-division CS, IS, and DS courses that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010

IS 2000 or higher, except IS 4900

DS 2000 or higher, except DS 4900

Political Science Courses

Code	Title	Hours
Political Science Requirements		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2399	Research Methods in Political Science	4
POLS 2400	Quantitative Techniques	4
Political Theory		
Complete one of the following:		4
POLS 2325	Ancient Philosophy and Political Thought	
POLS 2328	Modern Political Thought	
POLS 2330	American Political Thought	
POLS 2332	Contemporary Political Thought	

Political Science Capstone

POLS 4701	Political Science Senior Capstone	4
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Political Science Electives

Complete four courses in the following range:		16
POLS 2000 to POLS 5999		

Integrative Requirement

Code	Title	Hours
Integrative Requirement		
Complete one of the following:		4
POLS 2390	Science, Technology, and Public Policy	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3408	International Security	

Supporting Course

Code	Title	Hours
Supporting Course		
Complete one of the following:		4
SOCL 4528	Computers and Society	
SOCL 3485	Environment, Technology, and Society	
SOCL 1280	The 21st-Century Workplace	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
PHIL 1145	Technology and Human Values	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
INSH 2102	Bostonography: The City through Data, Texts, Maps, and Networks	

Computer Science Writing Requirement

Code	Title	Hours
College Writing		
ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	
Advanced Writing in the Disciplines		
Complete one of the following:		4
ENGW 3302	Advanced Writing in the Technical Professions	
ENGW 3308	Advanced Writing in the Social Sciences	
ENGW 3311	Advanced Writing for Prelaw	
ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines	

Required General Electives

Code	Title	Hours
Complete seven general electives.		28

Major GPA Requirement

Minimum 2.000 GPA required in all CS and IS courses

Computer Science and Political Science Major Credit Requirement

100 semester hours required in the major

NUpath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing in the First Year
- Writing-Intensive in the Major

- Advanced Writing in the Disciplines
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Year, Two Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 2500 and CS 2501	5	IS 2000	4	CS 3500	4		
CS 1200	1	ENGW 1111	4				
POLS 1150 and POLS 1151	4	POLS 1160 and POLS 1161	4				
POLS 1155 and POLS 1156	4						
		19		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	ENGW 3302, 3308, 3311, or 3315	4	Co-op	4
POLS 2399	4	CS elective 1	4	Elective	4		
POLS theory elective	4	POLS 2400	4				
Elective	4	POLS elective 1	4				
		Elective	4				
		16		17		8	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	4
		POLS elective 2	4	Elective	4		
		POLS elective 3	4				
		Computing and social issues requirement	4				
		THTR 1170	1				
		0		17		8	
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 3	4				
		POLS 4701	4	Elective	4		
		POLS elective 4	4	Elective	4		

POLS integrative requirement	4		
	0	16	8

Total Hours: 134

Five Year, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 2500 and CS 2501	5	IS 2000	4				
CS 1200	1	ENGW 1111	4				
POLS 1150 and POLS 1151	4	POLS 1160 and POLS 1161	4				
POLS 1155 and POLS 1156	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	CS 1210	1	Vacation		Co-op	
CS 3500	4	CS 3200	4				
POLS 2399	4	POLS 2400	4				
POLS theory elective	4	POLS elective 1	4				
		Elective	4				
	16		17		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 1	4	ENGW 3302, 3308, 3311, or 3315	4	Co-op	4
		POLS elective 2	4	Elective	4		
		Computing and social issues requirement	4				
		Elective	4				
		THTR 1170	1				
	0		17		8		0

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		CS elective 2	4	Elective	4	Co-op	4
		POLS elective 3	4	Elective	4		
		POLS integrative requirement	4				
		Elective	4				
	0		16		8		0

Year 5

Fall	Hours	Spring	Hours
Co-op		CS elective 3	4
		POLS 4701	4
		POLS elective 4	4
		Elective	4
	0		16

Total Hours: 134

Political Science, Minor

The political science minor introduces students to key concepts, practices, and perspectives in the study of politics and government. Students complete at least two of the three introductory courses—American government, comparative politics, and international relations—as well as three other courses in political science.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
Complete two of the following:		8
POLS 1150	American Government	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	

Elective Courses

Code	Title	Hours
Complete three political science courses.		12

GPA Requirement

2.000 GPA required in the minor

American Political Institutions, Minor

The American political institutions minor introduces students to key concepts, practices, and perspectives in the study of American politics and government. Students complete the introductory American government course as well as four other courses that focus on various aspects of American politics and government at the national, state, and local levels.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: This minor is restricted to students who are not enrolled in the political science major or in any political science combined major.

Required Course

Code	Title	Hours
POLS 1150	American Government	4

Electives

Code	Title	Hours
Complete four of the following:		16
POLS 2334	Bureaucracy and Government Organizations	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	
POLS 4500	U.S. Constitutional Law	
POLS 4505	U.S. Civil Liberties	

GPA Requirement

2.000 GPA required in the minor

International Security Studies, Minor

The international security studies minor introduces students to key concepts, practices, and perspectives in the study of international security. Students complete the introductory course in international relations as well as four other courses in political science that focus on various aspects of international security, including international law, international organizations, and U.S. security policy.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Note: Political science majors and combined majors may not pursue the minor in international security studies.

Required Core Courses

Code	Title	Hours
POLS 1160	International Relations	4
POLS 3408	International Security	4
POLS 3420	U.S. National Security Policy	4

Elective Courses

Code	Title	Hours
Students may not count any of the courses toward more than one requirement.		
Complete two of the following:		8
ARMY 3503	American Military History	
POLS 3406	International Law	
POLS 3408	International Security	
POLS 3420	U.S. National Security Policy	
POLS 3425	U.S. Foreign Policy	
POLS 3430	Revolution, Civil War, and Insurrection	
POLS 3470	Arab-Israeli Conflict	
POLS 3487	Politics of Developing Nations	
POLS 4910	Model United Nations	
POLS 4918	Model NATO	

GPA Requirement

2.000 GPA required in the minor

Sociology and AnthropologyWebsite (<http://www.northeastern.edu/socant>)**Matthew O. Hunt, PhD**

Professor and Chair

500 Holmes Hall

617.373.2686

617.373.2688 (fax)

Mary Ramsey, Administrative Assistant, m.ramsey@northeastern.edu

Sociology and cultural anthropology provide the critical perspective needed for studying the social and cultural arrangements in which people live, for understanding how societies function, for investigating the conditions under which people change their institutions, and for describing the modes and conditions of cooperation that make social life possible.

Courses in the program examine such areas as urbanization, the environment, health, globalization and human rights, gender and sexuality, social movements, the cultural underpinnings of science and technology, new media, and the comparative analysis of advanced capitalist societies. Many courses are directly relevant to majors in other fields, including economics, political science, philosophy, literature, criminal justice, and business.

The major in sociology or cultural anthropology seeks to prepare students for careers in public or private service, including such fields as law, teaching, social work, administration or management, and research.

Academic Progression Standards

Same as university-wide standards described under "Academic Status (p. 31)."

Preapproved Template Program in Cultural Anthropology

The Department of Sociology and Anthropology offers a preapproved template program in cultural anthropology. The template program may be paired with another preapproved template program to create a combined major; to see a list of current preapproved template programs, visit the combined majors webpage (<http://www.northeastern.edu/registrar/major-2.html>).

Students may request admission to such a combined major via the Combined Major Approval form (<http://www.northeastern.edu/registrar/form-maj-comb.pdf>), which requires approval by both disciplines/colleges together with an approved curriculum. For additional information on preapproved template programs, see "Student-Requested Combined Major (p. 33)." For template program requirements, visit the myNortheastern web portal (<http://www.myneu.neu.edu>), click on the "Self-Service" tab, then on "My Degree Audit."

PlusOne Program (MA) in Sociology

Sociology majors at the end of their sophomore year or the beginning of their junior year may qualify for application to the PlusOne program that combines the BA with the master's degree in sociology. Students interested in this option should consult with the departmental advisor by the end of the sophomore year.

Programs

Bachelor of Arts (BA)

- Sociology (p. 911)
- Cultural Anthropology (p. 913)
- Sociology and Cultural Anthropology (p. 915)
- Communication Studies and Sociology (p. 120)
- Cultural Anthropology and Theatre (p. 211)
- English and Cultural Anthropology (p. 703)
- History and Cultural Anthropology (p. 734)
- Human Services and Sociology (p. 758)
- International Affairs and Cultural Anthropology (p. 790)
- Media and Screen Studies and Sociology (p. 146)
- Sociology and Environmental Studies (p. 530)
- Sociology and International Affairs (p. 805)
- Sociology and Political Science (p. 888)

Bachelor of Science (BS)

- Sociology (p. 933)
- Cultural Anthropology (p. 937)
- Sociology and Cultural Anthropology (p. 939)
- Computer Science and Sociology (p. 344)
- Human Services and Sociology (p. 767)
- Linguistics and Cultural Anthropology (p. 507)

Minors

- Sociology (p. 943)
- Cultural Anthropology (p. 943)

Accelerated Programs

See Accelerated Bachelor/Graduate Degree Programs (p. 944)

Sociology, BA

Sociology is the scientific study of society. It begins with the premise that individuals are affected by the social structures, institutions, and cultural milieus surrounding them. Sociology provides students with the conceptual tools to understand how various features of society affect its members as well as how people create and maintain those same features.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Major Requirements

Code	Title	Hours
Required Sociology		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
Advanced Methods Requirement		
Complete one of the following:		4
ANTH 3410	Ethnographic Field Experience	
CRIM 4800	Crime Mapping	
DA 5030	Introduction to Data Mining/Machine Learning	
DS 4100	Data Collection, Integration, and Analysis	
DS 4400	Machine Learning and Data Mining 1	
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	
POLS 2400	Quantitative Techniques	
SOCL 2323	Ethnographic Methods	
SOCL 3487	Applied Sociology: Practice and Theory	
Senior Seminar		
SOCL 4600	Senior Seminar	4

Required Sociology Electives

Code	Title	Hours
Introductory-Level Electives		
Complete one course in the following range:		4
SOCL 1100 to SOCL 1999		
Intermediate-Level Electives		
Complete two courses in the following range:		8
SOCL 2000 to SOCL 3999		
Elective in Social Change		
Complete one of the following:		4
SOCL 1260	Gender in a Changing Society	
SOCL 1280	The 21st-Century Workplace	
SOCL 2268	Social Movements	
SOCL 2450	Class, Power, and Social Change	
Elective in Social Inequality		
Complete one of the following:		4
SOCL 1245	Sociology of Poverty	
SOCL 1275	Social Stratification	
SOCL 2205	Law and Social Justice	
SOCL 2270	Race and Ethnic Relations	
Advanced-Level Elective		
Complete one course in the following range:		4
SOCL 4000 to SOCL 4999		
Social Science Electives		
Complete three social science courses in the following subject areas: AFRS, AFAM, ANTH, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, or PSYC.		12

Sociology Experiential Learning Requirement

Code	Title	Hours
Complete one of the following courses or a study abroad or a co-op:		4
SOCL 3487	Applied Sociology: Practice and Theory	
SOCL 4971	Junior/Senior Honors Project 2	
SOCL 3488	Doing Sociology in the City Abroad	

Sociology Major Grade Requirement

A GPA of 2.000 across all major courses is required.

Sociology Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1000	1	SOCL 1200-level elective	4	Vacation	0	Vacation	0
SOCL 1101	4	SOCL 1200-level elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
ANTH 1101	4						
		17	16	0	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2300	4	Foreign language core course	4	Vacation	0	Co-op	0
SOCL 2320	4	SOCL 2321	4				
Elective	4	SOCL 1200-level elective	4				
Social science elective	4	EESH 2000	1				
		Elective	4				
		16	17	0	0		
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Elective	4	Co-op	0
		Foreign language core course	4	SOCL intermediate elective	4		
		Elective	4				
		SOCL intermediate elective	4				
		0	16	8	0		

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Foreign language core course	4	Elective	4	Co-op	0
		Elective	4	Social science elective	4		
		SOCL intermediate elective	4				
		Social science elective	4				
		0	16	8	0		

Year 5			
Fall	Hours	Spring	Hours
Co-op	0	SOCL 4600	4
		SOCL advanced elective	4
		Social science elective	4
		Elective	4
		0	16

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1000	1	SOCL 1200-level elective	4	Vacation	0	Vacation	0
SOCL 1101	4	SOCL 1200-level elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
ANTH 1101	4						
		17	16	0	0		
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2300	4	Co-op	0	Co-op	0	Elective	4
SOCL 2320	4					Foreign language core course	4
		Social science elective	4				
		Elective	4				
		EESH 2000	1				
		17	0	0	0		8
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Foreign language core course	4	Co-op	0	Co-op	0	Elective	4

ENGW 3315	4			SOCL intermediate elective	4
SOCL 1200-Level elective	4				
SOCL 2321	4				
	16		0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Social science elective	4	Co-op	0	Co-op	0	Vacation	0
Foreign language core course	4						
SOCL intermediate elective	4						
Elective	4						
	16		0	0			0

Year 5

Fall	Hours	Spring	Hours
SOCL intermediate elective	4	Social science elective	4
Social science elective	4	Elective	4
Elective	4	SOCL advanced elective	4
Elective	4	SOCL 4600	4
	16		16

Total Hours: 130

Cultural Anthropology, BA

Anthropology is the holistic, cross-cultural study of humanity that explores the multiple ways humans live and create meaning in the world. At Northeastern University, the sociology and anthropology department specializes in **cultural anthropology** and **social anthropology**—the relationship of culture to the institutions, relationships, and practices of everyday life that make up social structures.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cultural Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 4600	Senior Seminar	4
SOCL 1101	Introduction to Sociology	4

Advanced Area Courses

Additional courses taken in this section may be used as electives.

Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete six ANTH courses. Two study-abroad courses may count toward this requirement with prior permission from the department.

Social Science Electives

Complete three social science courses from the following subject areas. Social science electives may not include music or art: AFRS, AFAM, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, PSYC, or SOCL.

¹ Students must choose between a one-semester senior project, which they would complete in the context of Senior Seminar (ANTH 4600), or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Cultural Anthropology Major Grade Requirement

A GPA of 2.000 across all major courses is required.

Cultural Anthropology Major Credit Requirement

Complete 68 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study**Five Years, Three Co-ops in Summer 2/Fall**

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 1000	1	SOCL 1101	4	Vacation	0	Vacation	0
ANTH 1101	4	Anthropology elective	4				
Social science elective	4	ENGW 1111	4				
Elective	4	MATH 1215	4				

Elective	4					
	17	16	0	0		
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ANTH 2300	4	Social science elective	4	Vacation	0	Co-op
Foreign language core course	4	Foreign language core course	4			
Social science elective	4	Elective	4			
Elective	4	Anthropology elective	4			
		EESH 2000	1			
	16	17	0	0		
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Advanced area ANTH 4500-ANTH 4515	4	ANTH 2305	4	Co-op
		Anthropology elective	4	Elective	4	
		ENGW 3315	4			
		Foreign language core course	4			
	0	16	8	0		
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op	0	Advanced area ANTH 4500-ANTH 4515	4	Elective	4	Co-op
		Anthropology elective	4	Elective	4	
		Elective	4			
		Elective	4			
	0	16	8	0		
Year 5						
Fall	Hours	Spring	Hours			
Co-op	0	ANTH 4600	4			
		Elective	4			
		Anthropology elective	4			
		Elective	4			
	0	16				

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ANTH 1000	1	SOCL 1101	4	Vacation	0	Vacation
ANTH 1101	4	Anthropology elective	4			
Social science elective	4	ENGW 1111	4			
Elective	4	MATH 1215	4			
Elective	4					
	17	16	0	0		
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ANTH 2300	4	Co-op	0	Co-op	0	Foreign language core course
Foreign language core course	4					Elective
Social science elective	4					
Anthropology elective	4					
EESH 2000	1					
	17	0	0	0	8	
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ANTH 2305	4	Co-op	0	Co-op	0	Elective
Foreign language core course	4					Elective
ENGW 3315	4					
Anthropology elective	4					
	16	0	0	0	8	
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Advanced area ANTH 4500-ANTH 4515	4	Co-op	0	Co-op	0	Vacation
Anthropology elective	4					
Social science elective	4					
Elective	4					
	16	0	0	0	0	
Year 5						
Fall	Hours	Spring	Hours			
Advanced area ANTH 4500-ANTH 4515	4	ANTH 4600	4			

Anthropology elective	4 Elective	4
Elective	4 Elective	4
Anthropology elective	4 Elective	4
		16 16

Total Hours: 130

Sociology and Cultural Anthropology, BA

The sociology/anthropology department at Northeastern University offers a combined major in sociology and anthropology. Students learn the disciplinary histories, practices, and methods of sociology and sociocultural anthropology, identify foundational and contemporary debates within and across these two disciplines, and evaluate their contributions to our understanding of local and global societies and cultures. The combined major offers students various opportunities for community engagement, experiential learning, and for gaining research skills using quantitative and qualitative methods.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Major Requirements

Code	Title	Hours
Required Sociology		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2321	Research Methods in Sociology	4

Sociology Electives

Introductory Electives

Complete two courses in the following range:	8
SOCL 1110 to SOCL 1999	

Intermediate Elective

Complete one course in the following range:	4
SOCL 2000 to SOCL 3999	

Advanced Elective

Complete one course in the following range:	4
SOCL 4000 to SOCL 4999	

Experiential Learning

Complete one of the following courses, or complete a study abroad or a dialogue of civilizations:	4
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SOCL 3487	Applied Sociology: Practice and Theory
COOP 3945	Co-op Work Experience
SOCL 4971	Junior/Senior Honors Project 2

Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 3421	Foundations of Anthropological Theory	4
Advanced Area Courses		
Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete four ANTH courses. One study-abroad course may also count toward this requirement with prior permission from the department. 16

Integrative Requirement

Students must choose between a one-semester senior project, which they would complete in the context of Senior Seminar (ANTH 4600) or Senior Seminar (SOCL 4600), or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Code	Title	Hours
Required Course		
ANTH 2305	Global Markets and Local Culture	4
Capstone		
SOCL 4600	Senior Seminar	4
or ANTH 4600	Senior Seminar	

Sociology and Cultural Anthropology Major Grade Requirement

A GPA of 2.000 across all major courses is required.

Sociology and Cultural Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Communication Studies and Sociology, BA

The communication studies department and the sociology department offer an interdisciplinary combined major in communication studies and sociology. The combined major integrates the study of communication skills and processes with the study of social behaviors.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond

specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Societies and Institutions (SI) and Ethical Reasoning (ER) are met through the major course requirements.

NUpath requirements Natural and Designed World (ND), Creative Expression/Innovation (EI), Interpreting Culture (IC), Formal and Quantitative Reasoning (FQ), Difference and Diversity (DD), and Analyzing and Using Data (AD) may be met through electives in the major.

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Communication Studies Requirements

Code	Title	Hours
Communication Studies Common Requirements		
COMM 1000	Communication Studies at Northeastern	1
COMM 1101	Introduction to Communication Studies	4
COMM 1112 or COMM 2301	Public Speaking Communication Research Methods	4
Foundation Course		
Complete one of the following:		4
COMM 1210	Persuasion and Rhetoric	
COMM 1225	Communication Theory	
COMM 1231	Principles of Organizational Communication	
COMM 1255	Communication in a Digital Age	
Cluster Course		
Complete one of the following:		4
COMM 1131	Sex, Relationships, and Communication	
COMM 2303	Global and Intercultural Communication	
COMM 2304	Communication and Gender	
COMM 2501	Communication Law	
COMM 2551	Free Speech in Cyberspace	
Writing-Intensive Courses		
Complete two of the following:		8
COMM 3200	Mobile Communication	
COMM 3201	Health Communication	
COMM 3230	Interpersonal Communication	
COMM 3304	Communication and Inclusion	
COMM 3320	Political Communication	
COMM 3330	Argumentation Theory	
COMM 3400	Rhetoric of Science	

COMM 3414	Great Speakers and Speeches 2, 1930–Present
COMM 3415	Communication Criticism
COMM 3445	Public Relations Principles
COMM 3501	Free Speech: Law and Practice
COMM 3530	Communication and Sexualities
COMM 3532	Theories of Conflict and Negotiation
COMM 3610	Communication, Politics, and Social Change
COMM 4535	Nonverbal Social Interaction
COMM 4605	Youth and Communication Technology
COMM 4631	Crisis Communication and Image Management

Communication Studies Electives

Complete three COMM courses. 12

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
Introductory Electives		
Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1285	Deviant Behavior and Social Control	
SOCL 1290	Juvenile Delinquency	
SOCL 1295	Drugs and Society	
Intermediate-Level Elective		
Complete one of the following:		4
SOCL 2205	Law and Social Justice	
SOCL 2268	Social Movements	
SOCL 2270	Race and Ethnic Relations	
SOCL 2358	Current Issues in Cities and Suburbs	
SOCL 2450	Class, Power, and Social Change	
SOCL 3440	Sociology of Human Service Organizations	
SOCL 3408	Sociology of Organizations	
SOCL 3441	Sociology of Health and Illness	
SOCL 3465	Globalization and the Evolution of Human Societies	
SOCL 3485	Environment, Technology, and Society	
SOCL 3487	Applied Sociology: Practice and Theory	
Advanced-Level Elective		
Complete one of the following:		4
SOCL 4514	"The Wire" and the Study of Urban Inequalities	

SOCL 4518	Law and Society in a Digital World
SOCL 4520	Race, Class, and Gender
SOCL 4523	Sexualities
SOCL 4528	Computers and Society
SOCL 4580	Special Topics in Sociology
SOCL 4992	Directed Study

Capstone and Integrative Requirements

Code	Title	Hours
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Integrative Course

Complete one of the following:		4
COMM 3320	Political Communication	
COMM 3532	Theories of Conflict and Negotiation	
SOCL 1246	Environment and Society	

Capstone/Senior Seminar Option

Complete one of the following two options:		8
<i>Communications Capstone Option</i>		

Complete one COMM course and one SOCL course from the following list:

COMM 4102	Health Communication Campaigns
COMM 4530	Communication and Quality of Life
COMM 4625	Online Communities
SOCL 3000 to SOCL 4999	

Sociology Senior Seminar Option

Complete SOCL 4600 and one COMM course from the following list:

SOCL 4600	Senior Seminar
COMM 3000 to COMM 4999	

Communication Studies Grade Requirement

No more than two grades below a C in communication studies courses may be used to fulfill degree requirements.

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Communication Studies and Sociology Combined-Major Credit Requirement

Complete 80 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	ENGW 1111	4	Communication studies elective	4	Vacation	0
COMM 1101	4	Communicati studies foundation course	4	Foreign language core course	4		
COMM 1112 or 2301	4	SOCL 2320	4				
SOCL 1101	4	SOCL 2321	4				

SOCL 2300	4				
	17	16	8	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Elective	4	Vacation	0	Co-op	0

Foreign language core course	4	Communicati studies elective	4				
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Introductory sociology elective	4	Foreign language core course	4				
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Elective	4	Introductory sociology elective	4				
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		EEAM 2000	1				
	16	17	0	0			

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Elective	4	Co-op	0

		Intermediate sociology elective	4	Elective	4		
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		Advanced writing in the disciplines course	4				
		Elective	4				

	0	16	8	0			
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Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Communication studies writing-intensive	4	Vacation	0	Co-op	0

		Communicati studies elective	4				
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		Integrative course	4				
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		Advanced sociology elective	4				
	0	16	0	0			

Year 5

Fall	Hours	Spring	Hours
Co-op	0	Communication studies or sociology capstone	4

		Communicati studies or sociology capstone elective	4				
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Elective	4
Elective	4
0	16

Total Hours: 130

Sample Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
COMM 1000	1	Communication studies foundation course	4	Foreign language core course	4	Vacation	0
COMM 1101	4	ENGW 1111	4	Elective	4		
COMM 1112 or 2301	4	SOCL 2320	4				
SOCL 1101	4	SOCL 2321	4				
SOCL 2300	4						
	17		16		8		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies cluster course	4	Co-op	0	Co-op	0	Communication studies elective	4
Introductory sociology elective	4					Introductory sociology elective	4
Foreign language core course	4						
EEAM 2000	1						
Elective	4						
	17		0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies writing-intensive	4	Co-op	0	Co-op	0	Vacation	0
Communication studies elective	4						
Foreign language core course	4						
Intermediate sociology elective	4						
	16		0		0		0

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Communication studies elective	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
Advanced sociology elective	4						

Advanced writing in the disciplines course	4						
	16		0		0		0

Year 5			
Fall	Hours	Spring	Hours
Communication studies writing-intensive	4	Communication studies or sociology capstone	4
Integrative requirement	4	Communication studies or sociology capstone elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Cultural Anthropology and Theatre, BA

This major is designed for students who want to combine a knowledge of the art of theatre, including performance, design, and production, with sociocultural theories and conceptual frameworks for understanding human behavior. It offers both classroom and experiential learning in the practice of making theatre and performance theories with cross-cultural approaches. Successful students develop an understanding of theatre's impact on past and present cultures, as well as a deeper awareness of the world in which they live.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Anthropology Requirements

Code	Title	Hours
Foundation Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4

Advanced Area Courses

Complete two of the following:

ANTH 4350	Ethnography of Southeast Asia
ANTH 4500	Latin American Society and Development
ANTH 4505	Native North Americans
ANTH 4510	Anthropology of Africa
ANTH 4515	Culture and Politics in Modern India

Anthropology Electives

Complete six courses in the following range. Two study-abroad courses may count toward this requirement with prior permission from the department: 24

ANTH 2300 to ANTH 4999

Social Science Electives

Complete three social science courses from the following subject areas: 12

AFRS, AFAM, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, PSYC, SOCL

Theatre Requirements

A minimum grade of C is required in all theatre courses.

Code	Title	Hours
Foundational Stages		
THTR 1101	Introduction to Theatre	4
THTR 1120	Acting 1	4
THTR 1131	Technical Theatre 1	4
THTR 1270	Introduction to Theatrical Design	4
THTR 2325	From Script to Stage	4
Theatre Texts and Context		
Complete one of the following:		4
THTR 2300	Classics of Global Theatre	
THTR 2315	Rebels of Modern Drama	
THTR 2320	America Onstage: Dramatizing the Dream	
THTR 2340	Theatre and Society	
Making Theatre		
THTR 1100	Production Experience 1	1
THTR 2000	Production Experience 2	1
THTR 4702	Capstone Rehearsal and Performance	4
Intermediate or Advanced Technique		
Complete two of the following:		8
THTR 2310	History of Musical Theatre	
THTR 2330	Playwriting	
THTR 2342	Acting 2	
THTR 2345	Acting for the Camera	
THTR 2346	Viewpoints	
THTR 2370	Lighting Design	
THTR 2380	Costume Design	
THTR 2400	Scenic Design	
THTR 2500	Breaking the Glass Ceiling: Women in Theatre	
THTR 3450	Acting 3—Playing Shakespeare	
THTR 3550	Directing for the Stage	
THTR 3570	Musical Theatre Performance	

Integrative Requirements

Code	Title	Hours
Integrative Courses		
THTR 4702	Capstone Rehearsal and Performance	4
ANTH 2300	Reading Culture through Ethnography	4

Cultural Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

English and Cultural Anthropology, BA

The English department and the sociology/anthropology department offer an interdisciplinary combined major in English and cultural anthropology. Broadly speaking, students in the combined major in English and cultural anthropology at Northeastern integrate the study of literature, language, and writing with the study of human culture and its intersections with structures of inequality (e.g., race, class, and gender) and contemporary global issues.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

English Requirements

Code	Title	Hours
English Course-Level Requirement		
In addition to the capstone, two of the courses chosen from the lists below must be numbered 3000–4999.		
Introduction to College		
ENGL 1000	English at Northeastern	1
Foundational Courses		
ENGL 1400	Introduction to Literary Studies	4
ENGL 1160	Introduction to Rhetoric	4
or ENGL 1410	Introduction to Writing Studies	

Diversity

Complete one of the following courses. This course may also be used to fulfill an additional English requirement below: 4

ENGL 2150	Literature and Digital Diversity
ENGL 2296	Early African-American Literature
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2760	Writing in Global Contexts
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature

Pre-Nineteenth-Century Literature

Complete one of the following: 4

ENGL 1600	Introduction to Shakespeare
ENGL 1700	Global Literature to 1500
ENGL 2240	17th-Century British Literature
ENGL 2296	Early African-American Literature
ENGL 3618	Milton
ENGL/JWSS 3678	Bedrooms and Battlefields: Hebrew Bible and the Origins of Sex, Gender, and Ethnicity
ENGL 4000	Topics in Early Literatures
ENGL 4010	Topics in Shakespeare
ENGL 4020	Topics in 17th- and 18th-Century Literatures

Nineteenth-, Twentieth-, and Twenty-First-Century Literature

Complete one of the following: 4

ENGL 2260	Romantic Poetry
ENGL 2330	The American Renaissance
ENGL 2340	American Realism
ENGL 3619	Emerson and Thoreau
ENGL 3720	19th-Century Major Figure
ENGL 4040	Topics in 19th-Century Literatures
ENGL 2301	The Graphic Novel
ENGL 2410	Contemporary American Literature
ENGL 2440	The Modern Bestseller
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2610	Contemporary Israeli Literature and Art (Abroad)
ENGL/JWSS 3685	Modern and Contemporary Jewish Literature
ENGL 3730	20th- and 21st-Century Major Figure

Theories and Methods

Complete one of the following: 4

ENGL 1140	Grammar: The Architecture of English
ENGL 1160	Introduction to Rhetoric
ENGL 1410	Introduction to Writing Studies
ENGL 2150	Literature and Digital Diversity
ENGL 3325	Rhetoric of Law
ENGL 3340	Technologies of Text

ENGL 3370	Writing Cultures
ENGL 3381	The Practice and Theory of Teaching Writing
ENGL 3700	Narrative Medicine
ENGL 4100	Topics in Literary Criticism
ENGL 4400	Opening the Archive
ENGL 4410	Research in Rhetoric and Writing
LING 1150	Introduction to Language and Linguistics
LING 2350	Linguistic Analysis
LING 3450	Syntax
LING 3452	Semantics
LING 3454	History of English
LING 3456	Language and Gender
LING 3458	Topics in Linguistics

Comparative Literature

Complete one of the following: 4

ENGL 1120	Trouble in Utopia
ENGL 1130	Animals, Objects, Humans
ENGL 1450	Reading and Writing in the Digital Age
ENGL 1500	British Literature to 1800
ENGL 1502	American Literature to 1865
ENGL 1503	American Literature 1865 to Present
ENGL 2150	Literature and Digital Diversity
ENGL 2370	The Modern Short Story
ENGL 2380	The Modern Novel
ENGL 2400	Modern Poetry
ENGL 2420	Contemporary Poetry
ENGL 2430	Contemporary Fiction
ENGL 2450	Postcolonial Literature
ENGL 2451	Postcolonial Women Writers
ENGL 2455	American Women Writers
ENGL 2460	Multiethnic Literatures of the U.S.
ENGL 2470	Asian-American Literature
ENGL 2510	Horror Fiction
ENGL 2520	Science Fiction
ENGL 2600	Irish Literary Culture (Abroad)
ENGL 2620	What Is Nature? (Abroad)
ENGL 2690	Boston in Literature
ENGL 3427	The Literature of Science
ENGL 3487	Film and Text (Abroad)
ENGL 3582	Children's Literature
ENGL 3663	The African-American Novel
ENGL 3676	Representing Gender and Sexuality in Literature
ENGL 4070	Topics in Genre

Writing

Complete one of the following: 4

ENGL 2700	Creative Writing
ENGL 2710	Style and Editing
ENGL 2730	Digital Writing
ENGL 2740	Writing and Community Engagement
ENGL 2760	Writing in Global Contexts
ENGL 2770	Writing to Heal

ENGL 2780	Visual Writing: Writing Visuals
ENGL 2850	Writing for Social Media: Theory and Practice
ENGL 3375	Writing Boston
ENGL 3376	Creative Nonfiction
ENGL 3377	Poetry Workshop
ENGL 3378	Fiction Workshop
ENGL 3380	Topics in Writing
ENGL 3382	Publishing in the 21st Century
ENGL 3384	The Writer's Marketplace

Capstone

ENGL 4710	Capstone Seminar	4
or ENGL 4720	Capstone Project	

English Electives

Complete two additional ENGL electives. 8

Cultural Anthropology Requirements

Code	Title	Hours
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Foundation Courses

ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 3421	Foundations of Anthropological Theory	4

Area Courses

Additional "area courses" taken may count as anthropology electives.

Complete two of the following: 8

ANTH 4350	Ethnography of Southeast Asia
ANTH 4500	Latin American Society and Development
ANTH 4505	Native North Americans
ANTH 4510	Anthropology of Africa
ANTH 4515	Culture and Politics in Modern India

Capstone

Students are expected to complete the following course in spring of their senior year.

ANTH 4600	Senior Seminar	4
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Anthropology Electives

Complete three 4-semester-hour courses in addition to the above requirements. One study-abroad course may also count toward this requirement with prior permission from the department. 12

Integrative Requirements

Code	Title	Hours
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One integrative course is required for each discipline. Courses taken as electives above may not be used as integrative courses.

English Integrative Course

Complete one of the following: 4

ENGL 2450	Postcolonial Literature
ENGL 2470	Asian-American Literature

Cultural Anthropology Integrative Courses

Complete one of the following: 4

ANTH 2300	Reading Culture through Ethnography
ANTH 3421	Foundations of Anthropological Theory

Cultural Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

English and Cultural Anthropology Combined-Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

History and Cultural Anthropology, BA

History and cultural anthropology offer an interdisciplinary combined major. Students interested in the combined major in history and cultural anthropology integrate the exploration of human history with the rigorous study of human cultures.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

History Requirements

Code	Title	Hours
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History Colloquium

HIST 1000	History at Northeastern	1
HIST 1200	Historical Research and Writing	1
HIST 1201	First-Year Seminar	4

Introductory Level

Complete one history course from the 1000 level. 4

History Seminar and Historical Writing

HIST 2301	The History Seminar	4
HIST 2302	Historical Writing	1

Pre-1800 History Elective

Complete one course from the following: 4

HIST 2390	Africa and the World in Early Times
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804

HIST 1252	Japanese Literature and Culture
HIST 1270	Ancient Greece
HIST 1271	Ancient Rome
HIST 1285	Introduction to Russian Civilization
HIST 2330	Colonial and Revolutionary America

Intermediate/Advanced History Cluster

Complete three history courses numbered 2303 or above. 12

Advanced History

Complete one history course at the 3000 level or above. 4

History Cluster

In conjunction with your history advisor, define a history cluster by the first semester of your junior year of study. A cluster comprises four history courses with no more than two courses in the 1200–1299 range.

Cultural Anthropology Requirements

Code	Title	Hours
Foundation Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
Area Courses		
Complete two courses from the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete three courses in the following range. One study-abroad course may count toward this requirement. 12

ANTH 2001 to ANTH 4599

Capstone Requirements

Code	Title	Hours
Complete one of the following:		4
ANTH 4600	Senior Seminar	
HIST 4701	Capstone Seminar	

Integrative Requirements

ANTH courses below will double count as area courses.

Code	Title	Hours
ANTH 4350	Ethnography of Southeast Asia	4
ANTH 4510	Anthropology of Africa	4
HIST 2360	History of Capitalism in East Asia	4

Students taking Senior Seminar (ANTH 4600) must complete either a one-semester senior project, which they would do in the context of ANTH 4600, or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Sample Five Years, Three Co-ops in Summer 2/Fall

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
HIST 1000	1	HIST elective or integrative 1	4	Vacation		Vacation
HIST 1200	1	HIST elective or integrative 2	4			
HIST 1201	4	ANTH 2305	4			
ENGW 1111	4	Elective	4			
ANTH 1101	4					
Elective	4					
		18			16	0
Year 2						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
HIST 2301	4	HIST elective or integrative 3	4	Vacation		Co-op
HIST 2302	1	HIST elective or integrative 4	4			
ANTH 3410	4	ANTH 3421	4			
ANTH area course 1	4	Elective	4			
Elective	4					
		17			16	0
Year 3						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		HIST elective or integrative 5	4	Elective	4	Co-op
		ANTH area course 2	4	Elective	4	
		ANTH elective 1	4			
		Elective	4			
		0			16	8
Year 4						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
Co-op		HIST elective or integrative 6	4	Elective	4	Co-op
		ANTH elective 2	4	Elective	4	
		ANTH elective 3	4			
		Elective	4			
		0			16	8

Year 5			
Fall	Hours	Spring	Hours
Co-op		HIST capstone or HIST senior project or ANTH capstone	4
		HIST elective or integrative 7	4
		Elective	4
		Elective	4
	0		16

Total Hours: 131

Human Services and Sociology, BA

Students pursuing a combined degree in human services and sociology will integrate the theoretical understandings of these two fields to better understand organizational and group behavior and their implications for individuals and communities utilizing human services. The human services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. The sociology major prepares students to rigorously analyze the social, political, and economic spheres of society at the local and global levels. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. The combined major provides students with the conceptual and practical tools to understand how various features of society affect its members as well as how people create social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUPath Requirements

All undergraduate students are required to complete the NUPath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
HUSV 1101	Human Services Professions	4

HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4

Policy

HUSV 3900	Introduction to Social Policy	4
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Research Methods

Complete option A or option B:		4
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Option A

HUSV 3700	Research Methods for Human Services	
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Option B

Complete the following and one additional HUSV course:

SOCL 2321	Research Methods in Sociology	
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Organization

SOCL 3440	Sociology of Human Service Organizations	4
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Human Services Internship

HUSV 4994	Human Services Internship	6
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Human Services Elective

Complete one additional HUSV course.		4
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Senior Capstone ¹

HUSV 4700	Senior Seminar in Human Services	4
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¹ With permission of human services, the student may complete sociology capstone Senior Seminar (SOCL 4600) and substitute one advanced human services elective for Senior Seminar in Human Services (HUSV 4700).

Sociology Requirements

Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 3440	Sociology of Human Service Organizations	4

Introductory Electives

Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1246	Environment and Society	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1285	Deviant Behavior and Social Control	
SOCL 1290	Juvenile Delinquency	
SOCL 1295	Drugs and Society	
ANTH 1101	Peoples and Cultures	

Intermediate-Level Elective

Complete one of the following:		4
SOCL 2205	Law and Social Justice	
SOCL 2268	Social Movements	
SOCL 2270	Race and Ethnic Relations	

SOCL 2358	Current Issues in Cities and Suburbs
SOCL 2450	Class, Power, and Social Change
SOCL 3441	Sociology of Health and Illness
SOCL 3487	Applied Sociology: Practice and Theory
ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective
ANTH 2305	Global Markets and Local Culture
ANTH 2350	Urban Anthropology

Advanced-Level Elective

Complete one of the following:		4
SOCL 4514	"The Wire" and the Study of Urban Inequalities	
SOCL 4518	Law and Society in a Digital World	
SOCL 4520	Race, Class, and Gender	
SOCL 4523	Sexualities	
SOCL 4580	Special Topics in Sociology	
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	
ANTH 4580	Special Topics in Anthropology	

Senior Seminar²

SOCL 4600	Senior Seminar	4
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² With permission of the sociology head advisor, the student may complete human services capstone Senior Seminar in Human Services (HUSV 4700) and substitute one advanced sociology elective for Senior Seminar (SOCL 4600).

Human Services/Sociology Integrative Course

Code	Title	Hours
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Human Services and Sociology Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

International Affairs and Cultural Anthropology, BA

Through this combined major, successful undergraduates will develop an awareness of contemporary cultures within their international, transnational, and global contexts since the early 20th century. The combined major addresses diverse and cross-disciplinary theories of interstate relations (conflict, cooperation, hierarchies); civil society, transnational advocacy networks, global social movements; and state-society relations (democracy, authoritarianism, social justice and inequalities, citizenship).

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

International Affairs Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1160	International Relations	4
ECON 1115	Principles of Macroeconomics	4
or HIST 2211	The World Since 1945	4
Global Dynamics		
Complete two of the following. Courses are divided into thematic groups to aid students in deciding which courses to take and have no bearing on major requirements:		8
<i>Environment</i>		
ENVR 1110	Global Climate Change	
ENVR 4515	Sustainable Development	
SOCL 1246	Environment and Society	
<i>Law, Diplomacy, and Global Governance</i>		
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
COMM 2303	Global and Intercultural Communication	
POLS 1155	Comparative Politics	
POLS 1160	International Relations	
POLS 2370	Religion and Politics	
POLS 3405	International Political Economy	
POLS 3406	International Law	
POLS 3407	International Organizations	
POLS 4910	Model United Nations	

POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
<i>Human Rights and Social Justice</i>	
INTL 2400	Politics of Islam and Gender
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
AFAM 2600	Contemporary Issues: Race, Science, and Technology
HIST 2373	Gender and Sexuality in World History
LPSC 2302	Global Human Rights: A Social and Economic Perspective
PHIL 1272	Ethics in the World's Religions
PHIL 5001	Global Justice
<i>Conflict and Security</i>	
CRIM 4630	Political Crime and Terrorism
HIST 1206	Drug Trade and Drug War: History, Security, Culture
HIST 3330	The Global Cold War
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
PHIL 5001	Global Justice
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
<i>Globalization</i>	
INTL 2240	Global Population and Development
INTL 2300	Religion in International Affairs
INTL 2480	Women and World Politics
or WMNS 2480	Women and World Politics
INTL 3200	Cities in a Global Context
INTL 5200	Political Economy: Interdisciplinary Perspectives
AFAM 2639	Globalism, Racism, and Human Rights
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ECON 1290	History of the Global Economy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
HIST 2211	The World Since 1945
HIST 2311	Colonialism/Imperialism
INTB 3310	Cultural Aspects of International Business
LPSC 2302	Global Human Rights: A Social and Economic Perspective
POLS 1160	International Relations
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
SOCL 3465	Globalization and the Evolution of Human Societies
<i>Population, Migration, and Diaspora</i>	
INTL 2240	Global Population and Development

INTL 2400	Politics of Islam and Gender
INTL 3200	Cities in a Global Context
AFRS 1185	Gender in the African Diaspora
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora
ANTH 1101	Peoples and Cultures
ANTH 2350	Urban Anthropology
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
<i>Development</i>	
INTL 2240	Global Population and Development
INTL 5200	Political Economy: Interdisciplinary Perspectives
ANTH 2305	Global Markets and Local Culture
ECON 1291	Development Economics
ECON 3404	International Food Economics and Policy
ENTR 2206	Global Social Enterprise
ENVR 4515	Sustainable Development
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
PHTH 5230	Global Health
POLS 3487	Politics of Developing Nations
<i>Communication and Media</i>	
COMM 2303	Global and Intercultural Communication
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
MSCR 2325	Global Media
MUSC 1140	Global Pop Music

International Experiential Learning
 Complete at least one “international semester” via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
Complete two regional analysis courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses:		
Africa		
AFRS 2307	Africa Today	8
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	

AFRS 3460	Contemporary Government and Politics in Africa
AFRS 4939	Community Health, Culture, and Development in Kenya
ANTH 4510	Anthropology of Africa
ENTR 3308	Business Economic History of South Africa
HIST 1180	African History
HIST 2390	Africa and the World in Early Times

Asia

ANTH 4350 or INTL 4350	Ethnography of Southeast Asia
ASNS 1150 or HIST 1150	East Asian Studies
CLTR 1500	Modern Chinese History and Culture
CLTR 1506	Introduction to Chinese Popular Culture
CLTR 1700	Introduction to Japanese Pop Culture
HIST 1246	World War II in the Pacific
HIST 1252	Japanese Literature and Culture
HIST 1253	History of Vietnam Wars
HIST 1500	Modern Chinese History and Culture
HIST 2308	Law, Justice, and Society in Modern China
HIST 2351	Modern Japan
HIST 2360	History of Capitalism in East Asia
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions
PHIL 1290	Chinese Philosophy and Religion
PHIL 2394	Chinese Buddhism
PHIL 2395	Japanese Buddhism
PHIL 4545	Religion and Politics in South Asia

Europe

CLTR 1501	Introduction to French Culture
CLTR 1503	Introduction to Italian Culture
CLTR 1504	Introduction to Spanish Culture
ECON 1293	European Economic History
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath
HIST 2280	Hitler, Germany, and the Holocaust
HIST 2370	Renaissance to Enlightenment
HIST 2376	Britain and the British Empire
HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500 or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate-level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
Anthropology Electives		
Complete three courses in the following range, one of which must be numbered 4000 or above. One study-abroad course may also count toward this requirement with prior permission from the department:		12
ANTH 2300 to ANTH 4999		
Advanced Area Courses		
Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Integrative Requirements

Code	Title	Hours
Global Markets		
ANTH 2305	Global Markets and Local Culture	4
Capstone		
ANTH 4600	Senior Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

Students taking Senior Seminar (ANTH 4600) must complete either a one-semester senior project, which they would do in the context of ANTH 4600, or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

International Affairs and Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Media and Screen Studies and Sociology, BA

The Media and Screen Studies Program and the Department of Sociology and Anthropology offer a combined major in media and screen studies and sociology. The combined major integrates the analysis, research, and production of traditional and emerging media along with the critical perspective needed for studying the social and cultural arrangements in which people live, for understanding how societies function, for investigating the conditions under which people change their institutions, and for describing the modes and conditions of cooperation that make social life possible.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

NUpath requirements Interpreting Culture (IC) and Societies and Institutions (SI) are met through the major course requirements.

NUpath requirements Creative Expression/Innovation (EI), Analyzing and Using Data (AD), Difference and Diversity (DD), and Ethical Reasoning (ER) may be met through electives in the major.

NUpath requirements Natural and Designed World (ND) and Formal and Quantitative Reasoning (FQ) must be met through general electives.

Media and Screen Studies Requirements

Code	Title	Hours
Introduction to College		
MSCR 1000	Media and Screen Studies at Northeastern	1
Introduction to Media Studies		
MSCR 1220	Media, Culture, and Society	4
Introduction to Screen Theory		
MSCR 2220	Understanding Media and Film	4
Advanced Theory		
MSCR 4623	Theories of Media and Culture	4
Media and Screen Electives		
Complete four of the following:		16
MSCR 1230	Introduction to Film Production	
MSCR 1310	Introduction to Digital Media Culture	
MSCR 2302	Advertising and Promotional Culture	
MSCR 2325	Global Media	
MSCR 2895	Film Analysis	
MSCR 3210	Special Topics in Media and Screen Studies	
MSCR 3422	Media Audiences	
MSCR 3426	Popular Music as Media Form	
MSCR 3435	Media Industries	
MSCR 3437	Media and Identity	
CINE 2160	Narrative Filmmaking	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3446	Topics in Documentary Production	
CINE 3920	Topics in Film Studies	
ARTD 3480	Video: Sound and Image	
ARTD 3485	Experimental Video	
ARTH 2212	Survey of the Still and Moving Image	
Advanced Media and Screen Electives		
Complete two of the following:		8
MSCR 4208	TV History	
MSCR 4602	Media and Democracy	
MSCR 4622	Special Topics in Media and Screen Studies	
MSCR 4992	Directed Study	
MSCR 4993	Independent Study	
CINE 3389	Screenwriting	
CINE 3392	Gender and Film	
CINE 3500	Film Theory	

Sociology Requirements

Code	Title	Hours
Core Courses in Sociology		
ANTH 1101	Peoples and Cultures	4
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4

SOCL 4600	Senior Seminar	4
Foundational Competency—Courses Numbered SOCL 1200 to SOCL 2900		
Complete two of the following:		8
SOCL 1228	Social Problems	
SOCL 1245	Sociology of Poverty	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1280	The 21st-Century Workplace	
SOCL 2205	Law and Social Justice	
SOCL 2268	Social Movements	
SOCL 2270	Race and Ethnic Relations	
SOCL 2450	Class, Power, and Social Change	

Foundational Competency—Courses Numbered 3000 to 4999		
Complete one of the following:		4
ANTH 3120	Consumer Cultures	
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics	
ANTH 4580	Special Topics in Anthropology	
SOCL 3465	Globalization and the Evolution of Human Societies	
SOCL 4518	Law and Society in a Digital World	
SOCL 4520	Race, Class, and Gender	
SOCL 4580	Special Topics in Sociology	

Integrative Requirement

Code	Title	Hours
Integrative Courses		
MSCR 3437	Media and Identity	4
SOCL 1246	Environment and Society	4

Media and Screen Studies Grade Requirement

No more than two grades below a C in media and screen studies courses may be used to satisfy degree requirements

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR 1000	1	MSCR 2220	4	Foreign language core course	4	Vacation	4
MSCR 1220	4	MSCR elective	4	Elective	4		
SOCL 1101	4	Foreign language core course	4				
ANTH 1101	4	SOCL 2300	4				
ENGW 1111	4						
17		16		8		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MSCR elective	4	Co-op		Co-op		Elective	4
Advanced MSCR elective	4					Elective	4
Foreign language core course	4						
EEAM 2000	1						
SOCL 2320	4						
17		0		0		8	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2321	4	Co-op		Co-op		Vacation	
SOCL foundational competency elective 1	4						
MSCR elective	4						
Elective	4						
16		0		0		0	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL foundational competency elective 2	4c	MSCR 3437	4	Vacation		Vacation	0
MSCR elective	4	MSCR 4623	4				
Advanced MSCR elective	4	SOCL foundational competency elective	4				
SOCL 1246	4	Elective	4				
12-16		16		0		0	

Year 5	
Fall	Hours
SOCL 4600	4
Elective	4
Elective	4
Elective	4
16	

Total Hours: 126-130

Sociology and Environmental Studies, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Requirements

Code	Title	Hours
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Required Sociology Courses

SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2321	Research Methods in Sociology	4
ANTH 2305	Global Markets and Local Culture	4

Statistics

Complete one of the following: 4

SOCL 2320	Statistical Analysis in Sociology	
ENVR 2500	Biostatistics	

Capstone

Complete one of the following:

SOCL 4600	Senior Seminar	
ENVS 4997	Senior Thesis	
ENVR 4900	Earth and Environmental Science Capstone	

Sociology Elective A

Please note that SOCL 1246 may not be used to fulfill this requirement as it is required in the major. Complete one course in the following range:

SOCL 1000 to SOCL 2999

Sociology Elective B

Complete three additional sociology courses in the following range:

SOCL 3000 to SOCL 5999

Environmental Studies Requirements

Code	Title	Hours
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Science Requirements

ENVR 1101	Environmental Science	4
ENVR 1112	Environmental Geology	4
or ENVR 1200	Dynamic Earth	
or ENVR 3125	Global Oceanic Change	
ENVR 3300 and ENVR 3301	Geographic Information Systems and Lab for ENVR 3300	5
EEMB 3460	Conservation Biology	4

Environmental Studies Elective A

Complete one of the following: 4

PHIL 1180	Environmental Ethics	
PHIL 1185	The Ethics of Food	
POLS 1150	American Government	
POLS 2395	Environmental Politics and Policy	
ENVR 1110	Global Climate Change	

ENVR 2900	Special Topics in Environmental Studies	
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Environmental Studies Electives B

Complete three of the following: 12

ENVR 3000 to ENVR 5999	
EEMB 3000 to EEMB 5999	
PPUA 3000 to PPUA 5999	

Integrative Requirements

Code	Title	Hours
SOCL 1246	Environment and Society	4
ENVR 4515	Sustainable Development	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Sociology and Environmental Studies Combined-Major Credit Requirement

Complete 81 semester hours in the major.

Program Requirements

128 total semester hours required

Sociology and International Affairs, BA

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Sociology Requirements

Code	Title	Hours
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Sociology Required Courses

ANTH 2305	Global Markets and Local Culture	4
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4

Sociology Electives A

Complete two courses in the following range: 8

SOCL 1000 to SOCL 2999

Sociology Electives B

Complete two courses in the following range: 8

SOCL 3000 to SOCL 5999

Capstone Requirement

SOCL 4600	Senior Seminar	4
or INTL 4700	Senior Capstone Seminar in International Affairs	

International Affairs Major Requirements

Courses used to fulfill major requirements may not be used to satisfy the global dynamics requirement. Peoples and Cultures (ANTH 1101), The World Since 1945 (HIST 2211), and International Relations (POLS 1160) may not be used as global dynamics courses. See department for additional courses.

Code	Title	Hours
Required Courses		
ECON 1115	Principles of Macroeconomics	4
or HIST 2211	The World Since 1945	
INTL 1101	Globalization and International Affairs	4
INTL 3400	International Conflict and Negotiation	4
POLS 1155	Comparative Politics	4
Global Dynamics		
POLS 1160	International Relations	4
Global Dynamics Elective 1		
Complete one of the following courses:		4
INTL 2240	Global Population and Development	
INTL 2480	Women and World Politics	
INTL 2300	Religion in International Affairs	
POLS 3418	Nationalism	
PHIL 5001	Global Justice	
Global Dynamics Elective 2		
Complete one of the following courses:		4
INTL 2240	Global Population and Development	
INTL 2300	Religion in International Affairs	
INTL 2400	Politics of Islam and Gender	
INTL 2480	Women and World Politics	
or WMNS 2480	Women and World Politics	
INTL 3200	Cities in a Global Context	
INTL 5200	Political Economy: Interdisciplinary Perspectives	
AFAM 2600	Contemporary Issues: Race, Science, and Technology	
AFAM 2639	Globalism, Racism, and Human Rights	
AFRS 3424	Epidemiology of Pandemic Diseases and Health Disparities in the African Diaspora	
ANTH 1101	Peoples and Cultures	
ANTH 2305	Global Markets and Local Culture	
ANTH 2315	Religion and Modernity	
ANTH 2350	Urban Anthropology	
COMM 2303	Global and Intercultural Communication	
MSCR 2325	Global Media	
CRIM 4630	Political Crime and Terrorism	
ECON 1290	History of the Global Economy	
ECON 1291	Development Economics	

ECON 3404	International Food Economics and Policy
ECON 4635	International Economics
ENGL 2450	Postcolonial Literature
ENTR 2206	Global Social Enterprise
ENTR 3306	Global Entrepreneurship
ENVR 1110	Global Climate Change
ENVR 4515	Sustainable Development
HIST 1218	Pirates, Planters, and Patriots: Making the Americas, 1492–1804
HIST 2211	The World Since 1945
HIST 2214	War in the Modern World
HIST 2311	Colonialism/Imperialism
INTB 1203	International Business and Global Social Responsibility
or INTB 1209	International Business and Global Social Responsibility
INTB 3310	Cultural Aspects of International Business
JRNL 3300	Covering Conflicts: Peace, War, and the Media
or INTL 3300	Covering Conflicts: Peace, War, and the Media
JRNL 5360	Global Reporting
LPSC 2302	Global Human Rights: A Social and Economic Perspective
MUSC 1140	Global Pop Music
PHIL 5001	Global Justice
PHTH 5230	Global Health
POLS 2370	Religion and Politics
POLS 3405	International Political Economy
POLS 3406	International Law
POLS 3407	International Organizations
POLS 3408	International Security
POLS 3420	U.S. National Security Policy
POLS 3430	Revolution, Civil War, and Insurrection
POLS 3487	Politics of Developing Nations
POLS 4910	Model United Nations
POLS 4918	Model NATO
POLS 4938	Dialogue of Civilizations: International Politics Abroad
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1271	Sex in Judaism, Christianity, and Islam
PHIL 1272	Ethics in the World's Religions
SOCL 1246	Environment and Society

International Experiential Learning

Complete at least one "international semester" via study abroad, international internship, international co-op, or two approved short-term programs abroad.

Regional Analysis Requirement

Code	Title	Hours
Complete two of the following courses, both of which must be in one region, from the following lists. Select courses taken during a semester study abroad or specific Dialogue of Civilizations courses may count as regional analysis courses pending approval of the international affairs head faculty advisor. See department for additional courses.		
Africa		
AFRS 2307	Africa Today	8
AFRS 2465	The Scope and Dynamics of Conflicts in Africa	
AFRS 2900	Swahili, Culture, and Politics in Kenya	
AFRS 3460	Contemporary Government and Politics in Africa	
AFRS 4939	Community Health, Culture, and Development in Kenya	
ANTH 4510	Anthropology of Africa	
ENTR 3308	Business Economic History of South Africa	
HIST 1180	African History	
HIST 2390	Africa and the World in Early Times	
Asia		
ANTH 4350 or INTL 4350	Ethnography of Southeast Asia	4
ASNS 1150 or HIST 1150	East Asian Studies	
CLTR 1500	Modern Chinese History and Culture	
CLTR 1506	Introduction to Chinese Popular Culture	
CLTR 1700	Introduction to Japanese Pop Culture	
HIST 1246	World War II in the Pacific	
HIST 1252	Japanese Literature and Culture	
HIST 1253	History of Vietnam Wars	
HIST 1500	Modern Chinese History and Culture	
HIST 2308	Law, Justice, and Society in Modern China	
HIST 2351	Modern Japan	
HIST 2360	History of Capitalism in East Asia	
PHIL 1275	Hinduism, Buddhism, and Beyond: Eastern Religions	
PHIL 1290	Chinese Philosophy and Religion	
PHIL 2394	Chinese Buddhism	
PHIL 2395	Japanese Buddhism	
PHIL 4545	Religion and Politics in South Asia	
Europe		
CLTR 1501	Introduction to French Culture	
CLTR 1503	Introduction to Italian Culture	
CLTR 1504	Introduction to Spanish Culture	
ECON 1293	European Economic History	
HIST 1170	Europe: Empires, Revolutions, Wars, and Their Aftermath	
HIST 2280	Hitler, Germany, and the Holocaust	
HIST 2370	Renaissance to Enlightenment	
HIST 2376	Britain and the British Empire	

HIST 4946	Independent Field Research Abroad: Central Europe
POLS 3435	Politics and Governance of Europe and the European Union

Latin America

ANTH 4500 or INTL 4500	Latin American Society and Development
CLTR 1505	Introduction to Latin American Culture
CLTR 1240	Latin American Film
HIST 1187	Introduction to Latin American History
LACS 1220	Latino, Latin American, and Caribbean Studies
LITR 4655	Latin American Literature

Middle East

INTL 1150	The Mediterranean World: An Overview
INTL 1160	Middle East Studies
INTL 2100	Modern Israel
INTL 2200	America and the Middle East
INTL 2400	Politics of Islam and Gender
INTL 3250	Democracy and Development in North Africa and the Mediterranean
CLTR 1502	Introduction to Arabic Culture
ECON 1292	Economic History of the Middle East
HIST 1185	Introduction to Middle Eastern History
HIST 1290	Modern Middle East
POLS 3465	Government and Politics in the Middle East
POLS 3470	Arab-Israeli Conflict
POLS 4915	Model Arab League
PHIL 1270	Judaism, Christianity, and Islam: Abrahamic Religions
PHIL 1280	Encountering Islam: Traditions, Debates, and Crosscultural Diversity
PHIL 1285	Jewish Religion and Culture
PHIL 1287	Modern Judaism

Russia

HIST 1285	Introduction to Russian Civilization
HIST 1286	History of the Soviet Union
SOCL 1215	Society and Culture in Russia

International Affairs Foreign Language Requirement

Complete course work in a language through at least intermediate level two. *Note:* Completing this requirement satisfies the language requirement for the BA degree.

Integrative Requirements

Code	Title	Hours
SOCL 3465	Globalization and the Evolution of Human Societies	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Sociology and International Affairs Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Sociology and Political Science, BA

The combined major in sociology and political science offers students the opportunity to integrate the study of politics and government with an analysis of social systems. Students complete core courses in political science along with core courses in sociology that include social theory and an introduction to social systems. This combined major highlights the important intersection between social norms and organizations with the evolution of politics and government.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

BA Language Requirements

All BA students are required to complete the BA language requirements (p. 40).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Sociology Requirements

Code	Title	Hours
Sociology Required Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
Sociology Introductory Electives		
Complete two courses in the following range:		8
SOCL 1200 to SOCL 1999		
Sociology Intermediate Elective		
Complete one course in the following range:		4
SOCL 2000 to SOCL 3999		
Sociology Advanced Elective		
Complete one course in the following range:		4
SOCL 4000 to SOCL 5999		
Statistics and Methods		
Complete one of the following sets:		8
SOCL 2320 and SOCL 2321	Statistical Analysis in Sociology and Research Methods in Sociology	

POLS 2400 and POLS 2399	Quantitative Techniques and Research Methods in Political Science
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Political Science Requirements

Code	Title	Hours
Political Science Required Courses		
POLS 1150	American Government	4
POLS 1155	Comparative Politics	4
POLS 1160	International Relations	4
POLS 2330	American Political Thought	4
Political Science Electives		
Complete two of the following:		8
POLS 2345	Urban Policies and Politics	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3418	Nationalism	
Political Science Upper-Level Electives		
Complete two courses in the following range:		8
POLS 3000 to POLS 5999		
Political Science Electives		
Complete two courses in the following range:		8
POLS 2300 to POLS 5999		

Political Science Concentrations (Optional)

If you are working toward one of the following concentrations, declare it with your advisor so that it may be added to your record. Requirements for the concentrations are listed below (p. 889).

- American Political Institutions
- Campaigns and Elections
- Identity, Culture, and Politics
- Public Policy

Capstone Requirement

Code	Title	Hours
Complete one of the following:		
SOCL 4600	Senior Seminar	4
POLS 4701	Political Science Senior Capstone	
POLS 4703	Senior Thesis	

Integrative Requirement

Code	Title	Hours
SOCL 4514	"The Wire" and the Study of Urban Inequalities	4
POLS 3324	Law and Society	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Program Requirement

128 total semester hours required

Concentrations (Optional)

CONCENTRATION IN AMERICAN POLITICAL INSTITUTIONS

Code	Title	Hours
Complete four of the following: 16		
POLS 2350	State and Local Politics	
POLS 3300	The U.S. Congress	
POLS 3302	Judicial Process and Behavior	
POLS 3305	The American Presidency	
POLS 3307	Public Policy and Administration	
POLS 3310	Public Opinion, Voting, and Elections	

CONCENTRATION IN CAMPAIGNS AND ELECTIONS

Code	Title	Hours
Required Courses		
With advisor approval, a co-op or internship may be substituted in place of POLS 4947:		
POLS 3160	Campaign Strategy	4
POLS 4947		4
Campaigns and Elections Electives		
If POLS 4947 was replaced by a co-op or internship, an additional elective must be taken.		
Complete two of the following: 8		
POLS 2345	Urban Policies and Politics	
POLS 2355		
POLS 3310	Public Opinion, Voting, and Elections	
POLS 3162	Local Campaigns and Elections	
POLS 3320	Politics and Mass Media	
POLS 3402		
POLS 3304		

CONCENTRATION IN IDENTITY, CULTURE, AND POLITICS

Code	Title	Hours
Core Course		
POLS 3418	Nationalism	4
Electives		
Complete three of the following: 12		
POLS 2360	Politics of Poverty	
POLS 2368	Music and Politics in America and Abroad	
POLS 2370	Religion and Politics	
POLS 3309	Lesbian, Gay, Bisexual, and Transgender Issues in Public Policy	
POLS 3324	Law and Society	

CONCENTRATION IN PUBLIC POLICY

Code	Title	Hours
Core Requirement		
POLS 3307	Public Policy and Administration	4
Electives		
Complete three of the following: 12		
POLS 2334	Bureaucracy and Government Organizations	
POLS 2335	Budgeting and Taxation	
POLS 2340	Business and Government	
POLS 2345	Urban Policies and Politics	
POLS 2350	State and Local Politics	

POLS 2357	Growth and Decline of Cities and Suburbs
POLS 2390	Science, Technology, and Public Policy
POLS 2395	Environmental Politics and Policy
POLS 3425	U.S. Foreign Policy

Sociology, BS

Sociology is the scientific study of society. It begins with the premise that individuals are affected by the social structures, institutions, and cultural milieus surrounding them. Sociology provides students with the conceptual tools to understand how various features of society affect its members as well as how people create and maintain those same features.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Major Requirements

Code	Title	Hours
Required Sociology		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
Cultural Anthropology		
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
Advanced Methods Requirement		
Complete one of the following: 4		
ANTH 3410	Ethnographic Field Experience	
CRIM 4800	Crime Mapping	
DA 5030	Introduction to Data Mining/Machine Learning	
DS 4100	Data Collection, Integration, and Analysis	
DS 4400	Machine Learning and Data Mining 1	
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	
POLS 2400	Quantitative Techniques	
SOCL 2323	Ethnographic Methods	
SOCL 3487	Applied Sociology: Practice and Theory	
Senior Seminar		
SOCL 4600	Senior Seminar	4

Required Sociology Electives

Code	Title	Hours
Introductory-Level Electives		
Complete two courses in the following range:		8
SOCL 1100 to SOCL 1999		
Intermediate-Level Electives		
Complete three courses in the following range:		12
SOCL 2000 to SOCL 3999		
Elective in Social Change		
Complete one of the following:		4
SOCL 1260	Gender in a Changing Society	
SOCL 1280	The 21st-Century Workplace	
SOCL 2268	Social Movements	
SOCL 2450	Class, Power, and Social Change	
Elective in Social Inequality		
Complete one of the following:		4
SOCL 1245	Sociology of Poverty	
SOCL 1275	Social Stratification	
SOCL 2205	Law and Social Justice	
SOCL 2270	Race and Ethnic Relations	
Advanced-Level Electives		
Complete two courses in the following range:		8
SOCL 4000 to SOCL 4999		
Social Science Electives		
Complete five social science courses in the following subject areas: AFRS, AFAM, ANTH, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, or PSYC.		20

Sociology Experiential Learning Requirement

Code	Title	Hours
Complete one of the following courses or a study abroad or a co-op:		4
SOCL 3487	Applied Sociology: Practice and Theory	
SOCL 4971	Junior/Senior Honors Project 2	
SOCL 3488	Doing Sociology in the City Abroad	

Sociology Major Grade Requirement

A GPA average of 2.000 across all major courses is required.

Sociology Major Credit Requirement

Complete 88 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1000	1	SOCL 1200-level elective	4	Vacation	0	Vacation	0
SOCL 1101	4	SOCL 1200-level elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				

ANTH 1101	4						
	17		16		0		0
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2300	4	SOCL 1200-level elective	4	Vacation	0	Co-op	0
SOCL 2320	4	SOCL 2321	4				
Elective	4	SOCL intermediate-level elective	4				
Elective	4	Elective	4				
		EESH 2000	1				
	16		17		0		0
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ENGW 3315	4	Social science elective	4	Co-op	0
		SOCL intermediate-level elective	4	Social science elective	4		
		SOCL intermediate-level elective	4				
		Social science elective	4				
	0		16		8		0
Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	SOCL intermediate-level elective	4	Social science elective	4	Co-op	0
		Social science elective	4	Elective	4		
		SOCL intermediate-level elective	4				
		SOCL advanced-level elective	4				
	0		16		8		0
Year 5							
Fall	Hours	Spring	Hours				
Co-op	0	SOCL advanced-level elective	4				
		Elective	4				
		Social science elective	4				
		SOCL 4600	4				
	0		16				

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 1000	1	SOCL 1200-level elective	4	Vacation	0	Vacation	0
SOCL 1101	4	SOCL 1200-level elective	4				
ENGW 1111	4	Elective	4				
MATH 1215	4	Elective	4				
ANTH 1101	4						
	17		16		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL 2300	4	Co-op	0	Co-op	0	SOCL 1200-level elective	4
SOCL 2320	4					SOCL intermediate-level elective	4
Social science elective	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ENGW 3315	4	Co-op	0	Co-op	0	SOCL intermediate-level elective	4
SOCL 2321	4					Elective	4
SOCL intermediate-level elective	4						
Social science elective	4						
	16		0		0		8

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SOCL intermediate-level elective	4	Co-op	0	Co-op	0	Vacation	0
Social science elective	4						
Elective	4						
SOCL intermediate-level elective	4						
	16		0		0		0

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Elective	4	SOCL 4600	4				
SOCL advanced-level elective	4	Social science elective	4				

Social science elective	4	Elective	4
Social science elective	4	SOCL advanced-level elective	4
	16		16

Total Hours: 130

Computer Science and Sociology, BS

The social aspects to computing continue to grow, primarily with respect to communication and the internet. The computer science and sociology combined major examines this significant impact on society and how people communicate and share culture. Students will have an opportunity to gain a solid programming foundation, as well as the practical and theoretical skills needed to address the complex social and cultural issues in a period of far-reaching social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Computer Science Courses

Code	Title	Hours
Computer Science Overview		
CS 1200	Leadership Skill Development	1
CS 1210	Professional Development for CCIS Co-op	1

Computer Science Fundamental Courses

A grade of C- or higher is required in computer science fundamental courses:

CS 1800 and CS 1802	Discrete Structures and Seminar for CS 1800	5
CS 2500 and CS 2501	Fundamentals of Computer Science 1 and Lab for CS 2500	5
CS 2510 and CS 2511	Fundamentals of Computer Science 2 and Lab for CS 2510	5

Computer Science Required Courses

CS 3000	Algorithms and Data	4
CS 3200	Database Design	4
CS 3500	Object-Oriented Design	4
IS 2000	Principles of Information Science	4

Computer Science Writing-Intensive Requirement

Complete one of the following:		
CS 4500	Software Development	4
IS 3500	Information System Design and Development	

DS 4200	Information Presentation and Visualization (Take DS 4100 either as a prerequisite of or concurrently with DS 4200.)
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Presentation Requirement

THTR 1170	The Eloquent Presenter	1
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Computer Science Elective Courses

With advisor approval, directed study, research, project study, and appropriate graduate-level courses may also be taken as upper-division electives.

Complete 12 credits of upper-division CS, IS, or DS classes that are not already required. Choose courses within the following ranges:

CS 2500 or higher, except CS 5010
IS 2000 or higher, except IS 4900
DS 2000 or higher, except DS 4900

Sociology Courses

Code	Title	Hours
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Sociology Required Courses

SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 2321	Research Methods in Sociology	4
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4

Sociology Electives

Complete one sociology elective in each of the following ranges: 12

Introductory elective: SOCL 1000 to SOCL 1999
Intermediate elective: SOCL 2000 to SOCL 3999
Advanced elective: SOCL 4000 to SOCL 4999

Sociology Required Capstone

SOCL 4600	Senior Seminar	4
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Integrative Course Requirement

Code	Title	Hours
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Complete one of the following: 4

SOCL 1280	The 21st-Century Workplace
SOCL 3485	Environment, Technology, and Society
SOCL 4528	Computers and Society
ANTH 3418	Wired/Unwired: Cybercultures and Technopolitics

Computer Science Writing Requirement

Code	Title	Hours
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College Writing

ENGW 1111	First-Year Writing	4
or ENGW 1102	First-Year Writing for Multilingual Writers	

Advanced Writing in the Disciplines

Complete one of the following: 4

ENGW 3302	Advanced Writing in the Technical Professions
ENGW 3308	Advanced Writing in the Social Sciences

ENGW 3315	Interdisciplinary Advanced Writing in the Disciplines
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Required General Electives

Code	Title	Hours
	Complete eight general electives.	32

Major GPA Requirements

Minimum 2.000 GPA required in all CS and IS courses, and a 2.000 average GPA requirement across all sociology classes is required.

NUPath Requirements Satisfied

- Engaging with the Natural and Designed World
- Conducting Formal and Quantitative Reasoning
- Analyzing and Using Data
- Writing-Intensive in the Major
- Writing in the First Year
- Advanced Writing in the Disciplines
- Interpreting Culture
- Understanding Societies and Institutions
- Demonstrating Thought and Action in a Capstone

Integrating Knowledge and Skills Through Experience is satisfied through co-op.

Program Requirement

133 total semester hours required

Plan of Study

Sample Patterns:

Four Years, Two Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	CS 3200	4	Vacation	
CS 2500 and CS 2501	5	IS 2000	4	CS 3500	4		
CS 1200	1	SOCL 2320	4				
ENGW 1111	4	ANTH 1101	4				
SOCL 1101	4						
		19		17		8	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
CS 1210	1					Elective	4
SOCL 2321	4						
ANTH 2305	4						
Elective	4						
		17		0		0	
Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 1	4	Co-op		Co-op		Elective	4
SOCL 2300	4					Elective	4

Sociology introductory elective	4			
Elective	4			
THTR 1170	1			
	17	0	0	8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours
CS elective 2	4	SOCL 4600	4	Elective	4
Sociology intermediate elective	4	CS writing-intensive requirement	4	Elective	4
Elective	4	Sociology advanced elective	4		
Integrative requirement	4	CS elective 3	4		
	16		16		8

Total Hours: 134

Five Years, Three Co-ops in Spring/Summer 1

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 1800 and CS 1802	5	CS 2510 and CS 2511	5	Vacation		Vacation	
CS 2500 and CS 2501	5	IS 2000	4				
CS 1200	1	SOCL 2320	4				
ENGW 1111	4	ANTH 1101	4				
SOCL 1101	4						
	19		17		0		0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3000	4	Co-op		Co-op		Vacation	
CS 3500	4						
CS 1210	1						
SOCL 2321	4						
ANTH 2305	4						
	17		0		0		0

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS 3200	4	Co-op		Co-op		ENGW 3302, 3308, or 3315	4
Elective	4					Elective	4
SOCL 2300	4						
Sociology introductory elective	4						
THTR 1170	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
CS elective 1	4	Co-op		Co-op		Elective	4

Sociology intermediate elective	4			Elective	4
Elective	4				
Integrative requirement	4				
	16		0		0
					8

Year 5

Fall	Hours	Spring	Hours
CS elective 2	4	SOCL 4600	4
Sociology advanced elective	4	CS writing-intensive requirement	4
Elective	4	CS elective 3	4
Elective	4	Elective	4
	16		16

Total Hours: 134

Cultural Anthropology, BS

Anthropology is the holistic, cross-cultural study of humanity that explores the multiple ways humans live and create meaning in the world. The anthropology major at Northeastern exposes students to diverse cultural perspectives from past and present societies; fosters student engagement with key contemporary issues such as global inequality, development, urbanization, and cultural change; and provides greater appreciation for the complexities of the world in which they live.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Cultural Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology		
SOCL 1101	Introduction to Sociology	4
ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 3421	Foundations of Anthropological Theory	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 4600	Senior Seminar	4

Advanced Area Courses

Complete two of the following. Additional courses taken in this section may be used as electives.

ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	

ANTH 4505	Native North Americans
ANTH 4510	Anthropology of Africa
ANTH 4515	Culture and Politics in Modern India

Anthropology Electives

Complete eight ANTH courses. Two study-abroad courses may count toward this requirement with prior permission from the department. 32

Social Science Electives

Complete three social science courses from the following subject areas. Social science electives may not include music or art: AFRS, AFAM, CRIM, ECON, HUSV, HIST, INTL, LING, LPSC, POLS, PSYC, or SOCL. 12

¹ Students must choose between a one-semester senior project, which they would complete in the context of Senior Seminar (ANTH 4600), or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Cultural Anthropology Major Grade Requirement

A cumulative GPA of 2.000 for all major courses is required.

Cultural Anthropology Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 1000	1	SOCL 1101	4	Vacation	0	Vacation	0
ANTH 1101	4	Anthropology elective	4				
Social science elective	4	MATH 1215	4				
Elective	4	ENGW 1111	4				
Elective	4						
		17		16		0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 2300	4	ANTH 2305	4	Vacation	0	Co-op	0
Anthropology elective	4	Anthropology elective	4				
Social science elective	4	Elective	4				
Elective	4	Social science elective	4				
		EESH 2000		1			
		16		17		0	

Year 3							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Advanced area ANTH 4500-ANTH 4515	4	Social science elective	4	Co-op	0
		Anthropology elective		4		ENGW 3315	
		4		4			
		Social science elective		4			
		Anthropology elective		4			
		0		16		8	

Year 4							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	Anthropology elective	4	Social science elective	4	Co-op	0
		Anthropology elective		4		Elective	
		4		4			
		Advanced area ANTH 4500-ANTH 4515		4			
		Elective		4			
		0		16		8	

Year 5							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op	0	ANTH 4600	4				
		Anthropology elective		4			
		Elective		4			
		Elective		4			
		0		16			

Total Hours: 130

Five Years, Three Co-ops in Spring/Summer 1

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 1000	1	SOCL 1101	4	Vacation	0	Vacation	0
ANTH 1101	4	Anthropology elective	4				
Social science elective	4	ENGW 1111	4				
Elective	4	MATH 1215	4				
Elective	4						
		17		16		0	

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 2300	4	Co-op	0	Co-op	0	Anthropology elective	4
		Anthropology elective		4		Social science elective	
		4		4		4	

Social science elective	4				
Elective	4				
	16	0	0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ANTH 2305	4	Co-op	0	Co-op	0	Anthropology elective	4
Anthropology elective	4					ENGW 3315	4
Social science elective	4						
Elective	4						
EESH 2000	1						
	17		0		0		8

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Anthropology elective	4	Co-op	0	Co-op	0	Vacation	0
Elective	4						
Advanced area ANTH 4500-ANTH 4515	4						
Elective	4						
	16		0		0		0

Year 5

Fall	Hours	Spring	Hours
Advanced area ANTH 4500-ANTH 4515	4	ANTH 4600	4
Social science elective	4	Social science elective	4
Anthropology elective	4	Anthropology elective	4
Elective	4	Elective	4
	16		16

Total Hours: 130

Sociology and Cultural Anthropology, BS

The sociology/anthropology department at Northeastern University offers a combined major in sociology and anthropology. Students learn the disciplinary histories, practices, and methods of sociology and sociocultural anthropology, identify foundational and contemporary debates within and across these two disciplines, and evaluate their contributions to our understanding of local and global societies and cultures. The combined major offers students various opportunities for community engagement, experiential learning, and for gaining research skills using quantitative and qualitative methods.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses

where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Sociology Major Requirements

Code	Title	Hours
Required Sociology		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2321	Research Methods in Sociology	4
Sociology Electives		
<i>Introductory Electives</i>		
Complete two courses in the following range:		8
SOCL 1110 to SOCL 1999		
<i>Intermediate Elective</i>		
Complete one course in the following range:		4
SOCL 2000 to SOCL 3999		
<i>Advanced Elective</i>		
Complete one course in the following range:		4
SOCL 4000 to SOCL 4999		
Experiential Learning		
Complete one of the following courses, or complete a study abroad or a dialogue of civilizations:		4
SOCL 3487	Applied Sociology: Practice and Theory	
COOP 3945	Co-op Work Experience	
SOCL 4971	Junior/Senior Honors Project 2	

Anthropology Major Requirements

Code	Title	Hours
Cultural Anthropology Core Courses		
ANTH 1101	Peoples and Cultures	4
ANTH 3410	Ethnographic Field Experience	4
ANTH 3421	Foundations of Anthropological Theory	4
Advanced Area Courses		
Complete two of the following:		8
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete four ANTH courses. One study-abroad course may also count toward this requirement with prior permission from the department. 16

Integrative Requirement

Students must choose between a one-semester senior project, which they would complete in the context of Senior Seminar (ANTH 4600) or

Senior Seminar (SOCL 4600), or a two-semester senior thesis, which would require them to also enroll in a fall-semester directed study.

Code	Title	Hours
Required Course		
ANTH 2305	Global Markets and Local Culture	4
Capstone		
SOCL 4600 or ANTH 4600	Senior Seminar	4

Sociology and Cultural Anthropology Major Grade Requirement

A GPA average of 2.000 across all major courses is required.

Sociology and Cultural Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Human Services and Sociology, BS

Students pursuing a combined degree in human services and sociology will integrate the theoretical understandings of these two fields to better understand organizational and group behavior and their implications for individuals and communities utilizing human services. The human services major prepares students for careers in social change by providing students with the theoretical and skill-based background necessary for practice and research. The sociology major prepares students to rigorously analyze the social, political, and economic spheres of society at the local and global levels. Students will develop a holistic understanding of preventative and reactive responses to social inequality and an understanding of how to impact change at the individual and structural levels. The combined major provides students with the conceptual and practical tools to understand how various features of society affect its members as well as how people create social change.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Human Services Requirements

Code	Title	Hours
Human Services Overview		
HUSV 1101	Human Services Professions	4
HUSV 2300	Counseling in Human Services	4
HUSV 3570	The Nonprofit Sector, Philanthropy, and Social Change	4
HUSV 3900	Introduction to Social Policy	4
Research Methods		
Complete option A or option B:		4
<i>Option A</i>		
HUSV 3700	Research Methods for Human Services	
<i>Option B</i>		
Complete the following and one additional HUSV course:		
SOCL 2321	Research Methods in Sociology	
Organization		
SOCL 3440	Sociology of Human Service Organizations	4
Human Services Internship		
HUSV 4994	Human Services Internship	6
Human Services Elective		
Complete one additional HUSV course.		4
Senior Capstone ¹		
HUSV 4700	Senior Seminar in Human Services	4
¹ With permission of human services, the student may complete sociology capstone Senior Seminar (SOCL 4600) and substitute one advanced human services elective for Senior Seminar in Human Services (HUSV 4700).		
Sociology Requirements		
Code	Title	Hours
Required Sociology Courses		
SOCL 1101	Introduction to Sociology	4
SOCL 2300	Social Theory	4
SOCL 2320	Statistical Analysis in Sociology	4
SOCL 3440	Sociology of Human Service Organizations	4
Introductory Electives		
Complete two of the following:		8
SOCL 1120	Society and Health	
SOCL 1220	Sociology of Boston	
SOCL 1228	Social Problems	
SOCL 1241	Sociology of Violence	
SOCL 1245	Sociology of Poverty	
SOCL 1246	Environment and Society	
SOCL 1255	Sociology of the Family	
SOCL 1260	Gender in a Changing Society	
SOCL 1275	Social Stratification	
SOCL 1285	Deviant Behavior and Social Control	
SOCL 1290	Juvenile Delinquency	
SOCL 1295	Drugs and Society	
ANTH 1101	Peoples and Cultures	
Intermediate-Level Elective		
Complete one of the following:		4

SOCL 2205	Law and Social Justice
SOCL 2268	Social Movements
SOCL 2270	Race and Ethnic Relations
SOCL 2358	Current Issues in Cities and Suburbs
SOCL 2450	Class, Power, and Social Change
SOCL 3441	Sociology of Health and Illness
SOCL 3487	Applied Sociology: Practice and Theory
ANTH 2302	Gender and Sexuality: A Cross-Cultural Perspective
ANTH 2305	Global Markets and Local Culture
ANTH 2315	Religion and Modernity
ANTH 2350	Urban Anthropology

Advanced-Level Elective

Complete one of the following: 4

SOCL 4514	“The Wire” and the Study of Urban Inequalities
SOCL 4518	Law and Society in a Digital World
SOCL 4520	Race, Class, and Gender
SOCL 4523	Sexualities
SOCL 4580	Special Topics in Sociology
ANTH 4350	Ethnography of Southeast Asia
ANTH 4500	Latin American Society and Development
ANTH 4505	Native North Americans
ANTH 4510	Anthropology of Africa
ANTH 4515	Culture and Politics in Modern India
ANTH 4580	Special Topics in Anthropology

Senior Seminar ²

SOCL 4600	Senior Seminar	4
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² With permission of the sociology head advisor, the student may complete Senior Seminar in Human Services (HUSV 4700) and substitute one advanced sociology elective for Senior Seminar (SOCL 4600).

Human Services/Sociology Integrative Course

Code	Title	Hours
HUSV 2350	Ethnic Relations, Cultural Identity, and Human Services	4

Sociology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Human Services and Sociology Combined-Major Credit Requirement

Complete 78 semester hours in the major.

Program Requirement

128 total semester hours required

Linguistics and Cultural Anthropology, BS

The combined major in linguistics and cultural anthropology focuses on the relationship of culture to the institutions, interpersonal relations, and practices that make up their social structure while emphasizing the structure of human language and its involvement in social interaction and culture. Students examine how language both reflects and influences cultural phenomena and how it can be used as a tool to study those

phenomena; and they apply their interests across a range of connected courses, co-op opportunities, and potential research projects.

Program Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified and complete any additional courses needed beyond specific college and major requirements to satisfy graduation credit requirements.

University-Wide Requirements

All undergraduate students are required to complete the University-Wide Requirements (p. 41).

NUpath Requirements

All undergraduate students are required to complete the NUpath Requirements (p. 37).

Experiential Liberal Arts

All undergraduate students in the College of Social Sciences and Humanities are required to complete the Experiential Liberal Arts Requirement (p. 622).

Linguistics Major Language Requirement

Complete two courses in the same language with a grade of C or higher. Proficiency at elementary level 2 or higher is required.

Linguistics Requirements

Note: A grade of C or higher is required for all courses in this section.

Code	Title	Hours
Introductory Linguistics		
LING 1150	Introduction to Language and Linguistics	4
Intermediate/Advanced Linguistics		
LING 2350	Linguistic Analysis	4
LING 3422	Phonology	4
LING 3442	Sociolinguistics	4
LING 3450	Syntax	4
LING 3456	Language and Gender	4
Linguistics Electives		
Complete two of the following:		8
DEAF 2700	ASL Linguistics	
LING 3420	Phonetics	
LING 3424	Morphology	
LING 3434	Bilingualism	
LING 3452	Semantics	
LING 3454	History of English	
LING 3458	Topics in Linguistics	
LING 4654	Seminar in Linguistics	
PSYC 3464	Psychology of Language	
PSYC 4610	Laboratory in Psycholinguistics	
PSYC 4658	Seminar in Psycholinguistics	
Linguistics Research		
Complete one of the following:		4
LING 4891	Research Seminar in Linguistics	
LING 4991	Directed Study Research	

LING 4970 and LING 4971	Junior/Senior Honors Project 1 and Junior/Senior Honors Project 2
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Anthropology Requirements

Code	Title	Hours
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Foundation Courses

ANTH 1101	Peoples and Cultures	4
ANTH 2305	Global Markets and Local Culture	4
ANTH 4600	Senior Seminar	4

Anthropology Advanced Area Courses

Complete three of the following: 12

ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Complete three ANTH courses not already taken. 12

Linguistics/Anthropology Integrative Requirement

Code	Title	Hours
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Integrative Course

LING 3412	Language and Culture	4
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Anthropology Major Grade Requirement

A GPA of 2.000 for major courses is required.

Linguistics/Anthropology Combined-Major Credit Requirement

Complete 76 semester hours in the major.

Program Requirement

128 total semester hours required

Plan of Study

Five Years, Three Co-ops in Summer 2/Fall

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation		Vacation	
ANTH 1101	4	ANTH 2305	4				
ENGW 1111	4	LING 3412	4				
MATH 1215	4	Foreign language course	4				
		16			16	0	
Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3422	4	LING 3442	4	Vacation		Co-op	
Foreign language course	4	LING 3450	4				
Anthropology elective	4	Anthropology elective	4				
Elective	4	Elective	4				
		16			16	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		LING 3456	4	Elective	4	Co-op	
		Linguistics elective	4	Elective	4		
		Anthropology elective	4				
		Elective	4				
		0			16	8	

Year 4

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Co-op		Linguistics elective	4	Elective	4	Co-op	
		Anthropology advanced area course	4	Elective	4		
		Anthropology advanced area course	4				
		ENGW 3315	4				
		0			16	8	

Year 5

Fall	Hours	Spring	Hours
Co-op		ANTH 4600	4
		Anthropology advanced area course	4
		Linguistics research	4
		Elective	4
		0	16

Total Hours: 128

Four Years, No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 1150	4	LING 2350	4	Vacation		Vacation	
ANTH 1101	4	ANTH 2305	4				
ENGW 1111	4	LING 3412	4				
MATH 1215	4	Foreign language course	4				
		16			16	0	

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
LING 3422	4	LING 3442	4	Vacation		Vacation	
Foreign language course	4	LING 3450	4				
Anthropology elective	4	Anthropology elective	4				
Elective	4	Elective	4				
		16			16	0	

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
Anthropology elective	4	LING 3456	4	Vacation	4	Vacation	4
Anthropology advanced area course	4	Linguistics elective	4				
Elective	4	Anthropology advanced area course	4				
ENGW 3315	4	Elective	4				
	16		16		0		0

Year 4

Fall	Hours	Spring	Hours
Linguistics research	4	ANTH 4600	4
Anthropology advanced area course	4	Linguistics elective	4
Elective	4	Elective	4
Elective	4	Elective	4
	16		16

Total Hours: 128

Sociology, Minor

The sociology minor at Northeastern helps students to understand how to apply empirical evidence to address a wide range of social problems. Sociology minors can take courses in quantitative and qualitative research methods and theoretical and empirical reasoning. Elective courses draw on our faculty's expertise in violence, family life, health and illness, the environment, technology, gender and sexuality, occupations and professions, social movements, the law, and social inequality. This minor can complement a wide range of majors throughout the university, providing students with a range of skills to better understand their place in complex social environments.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Introduction to Sociology

Code	Title	Hours
SOCL 1101	Introduction to Sociology	4

Research Methods

An intermediate- or advanced-level SOCL elective may be substituted for Research Methods in Sociology (SOCL 2321) with departmental approval.

Code	Title	Hours
SOCL 2300	Social Theory	4
or SOCL 2321	Research Methods in Sociology	

Introductory-Level Required Electives

Code	Title	Hours
Complete two courses in the following range:		8
SOCL 1100 to SOCL 1299		

Intermediate-/Advanced-Level Required Elective

Code	Title	Hours
Complete one course in the following range:		4
SOCL 3400 to SOCL 4599		

GPA Requirement

2.000 GPA required in the minor

Cultural Anthropology, Minor

The cultural anthropology minor at Northeastern focuses on the study of culture as it is located in issues of race, ethnicity, class, gender, history, and globalization. Students develop proficiencies in widely applicable skills and frameworks, such as cultural relativism, comparative analysis, cross-cultural communication, research design, and ethnographic field research. Students have the opportunity to work with faculty members with regional expertise in Latin America, Europe, Asia, Africa, and North America and who teach courses on contemporary issues such as globalization, digital technologies, consumerism, sports, gender and sexuality, tourism, and social movements. This minor can complement a wide range of majors throughout the university, providing students with regional expertise and a depth of cultural understanding.

Minor Requirements

Complete all courses listed below unless otherwise indicated. Also complete any corequisite labs, recitations, clinicals, or tools courses where specified.

Required Courses

Code	Title	Hours
ANTH 1101	Peoples and Cultures	4
ANTH 3421	Foundations of Anthropological Theory	4
or ANTH 3410	Ethnographic Field Experience	

Advanced Area Courses

Code	Title	Hours
Complete one of the following:		4
ANTH 4350	Ethnography of Southeast Asia	
ANTH 4500	Latin American Society and Development	
ANTH 4505	Native North Americans	
ANTH 4510	Anthropology of Africa	
ANTH 4515	Culture and Politics in Modern India	

Anthropology Electives

Code	Title	Hours
Complete two ANTH courses.		8

GPA Requirement

2.000 GPA required in the minor

Accelerated Bachelor/Graduate Degree Programs

Northeastern University offers a number of PlusOne bachelor's/master's degree programs that allow students to accelerate the completion of the bachelor's degree by applying graduate credits taken as an undergraduate toward both the undergraduate and graduate degrees.

Generally, both degrees may be earned in one more year than is the normal time allotted for completion of the bachelor's degree. See additional information on PlusOne Bachelor's/Master's programs (<http://www.northeastern.edu/plusone>).

While a number of PlusOne bachelor's/master's degree programs have been predefined, students may propose to combine other CSSH undergraduate and graduate programs. For more information on the formal process of proposing student-initiated PlusOne programs, please visit the CSSH graduate programs website (<https://www.northeastern.edu/cssh/graduate/programs/plusone-programs>)

Northeastern University School of Law also admits students from a small number of programs in the College of Social Sciences and Humanities to a 3+3 program that allows students to count their first year of law school toward their undergraduate degree.

Programs

Criminal Justice

- Criminal Justice, BS/Criminal Justice, MS
- Criminal Justice, BS/JD

Economics

- Economics, BA/Economics, MA
- Economics, BS/Economics, MA

English

- English, BA/English, MA

History

- History, BA/History, MA
- History, BS/History, MA
- History, BA/JD
- History, BS/JD

Human Services

- Human Services, BA/College Student Development and Counseling, MS
- Human Services, BS/College Student Development and Counseling, MS

International Affairs

- International Affairs, BA/MA

Philosophy and Religion

- Philosophy, BA/JD
- Philosophy, BS/JD

Political Science

- Political Science, BA/Political Science, MA
- Political Science, BA/Public Administration, MPA
- Political Science, BA/Security and Resilience Studies, MS
- Political Science, BA/International Affairs, MA
- Political Science, BS/Political Science, MA

- Political Science, BS/Public Administration, MPA
- Political Science, BS/Security and Resilience Studies, MS
- Political Science, BA/JD
- Political Science, BS/JD

Sociology

- Sociology, BA/Sociology, MA
- Sociology, BS/Sociology, MA

Faculty

Mehdi Abedi

Assistant Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Emad Aboelela

Associate Teaching Professor, Electrical and Computer Engineering; University of Miami, PhD

Max Abrahms

Assistant Professor, Political Science; University of California, Los Angeles, PhD

Ali Abur

Professor, Electrical and Computer Engineering; Ohio State University, PhD

Laurie Achin

Visiting Lecturer, American Sign Language; Gallaudet University, MA

Daniel Adams

Associate Professor, Architecture; Harvard University, MArch

George G. Adams

College of Engineering Distinguished Professor, Mechanical and Industrial Engineering; University of California, Berkeley, PhD

Jeffrey Agar

Associate Professor, Chemistry and Chemical Biology and Pharmaceutical Sciences; University of Georgia, PhD

Rajesh Aggarwal

Professor, Finance; Harvard University, PhD

Christina Agostinelli-Fucile

Assistant Teaching Professor, World Languages Center; State University of New York, Buffalo, PhD

Ruth Aguilera

Distinguished Professor, International Business and Strategy; Harvard University, PhD

Amal Ahmed

Associate Professor, Computer and Information Science; Princeton University, PhD

Amira Ahmed Mohamed

Visiting Scholar, International Affairs; University of East London (United Kingdom), PhD

Jaehan Ahn

Assistant Professor, Accounting; University of Oklahoma, PhD

Sophia Ainslie

Lecturer, Art + Design; School of the Museum of Fine Arts/Tufts University, MFA

Mohammad Alam

Professor, Economics; University of Western Ontario (Canada), PhD

Noor E. Alam

Assistant Professor, Mechanical and Industrial Engineering; University of Alberta (Canada), PhD

Brian Albrecht

Associate Cooperative Education Coordinator, College of Engineering; Carnegie Mellon University, MS

Len Albright

Assistant Professor, Sociology and Anthropology and Public Policy and Urban Affairs; University of Chicago, PhD

Daniel Aldrich

Professor, Political Science and Public Policy and Urban Affairs; Harvard University, PhD

Todd M. Alessandri

Associate Professor, International Business and Strategy; University of North Carolina, Chapel Hill, PhD

Jacques Alexis

Assistant Academic Specialist, College of Professional Studies; University of Wisconsin, Platteville, MS

Nicole Aljoe

Associate Professor, English; Tufts University, PhD

Kristen Allison

Assistant Professor, Communication Sciences and Disorders; University of Wisconsin, Madison, PhD

Michael Allshouse

Assistant Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Meryl Alper

Assistant Professor, Communication Studies; University of Southern California, PhD

Shannon Alpert

Assistant Teaching Professor, College of Professional Studies; University of North Carolina, Charlotte, EdD

Akram N. Alshawabkeh

George A. Snell Professor of Engineering, Civil and Environmental Engineering; Louisiana State University, PhD

Sari Altschuler

Assistant Professor, English; City University of New York, PhD

George O. Alverson

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Christopher Amato

Assistant Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Steven Amato

Associate Teaching Professor, College of Professional Studies; Boston College, PhD

Saurabh Ambulkar

Assistant Professor, Supply Chain and Information Management; Iowa State University, PhD

Jane Amidon

Professor, Architecture; Harvard University, MLA

Mansoor M. Amiji

University Distinguished Professor, Pharmaceutical Sciences; Purdue University, PhD

Mahshid Amirabadi

Assistant Professor, Electrical and Computer Engineering; Texas AM University, PhD

Ghita Amor-Tijani

Lecturer, Computer and Information Science; George Washington University, PhD

Teiichi Ando

Professor, Mechanical and Industrial Engineering; Colorado School of Mines, PhD

Jonathan Andrew

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; SIT Graduate Institute, MA

Edwin C. Andrews

Associate Professor, Art + Design; Indiana University, MFA

Jose Annunziato

Assistant Teaching Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Javier Apfeld

Assistant Professor, Biology; University of California, San Francisco, PhD

Carmen G. Armengol

Associate Professor, Applied Psychology; Pennsylvania State University, PhD

Richard Arrowood

Associate Teaching Professor, College of Professional Studies; Massachusetts School of Law, JD

Cheryl Arruda

Assistant Cooperative Education Coordinator, College of Engineering; Northeastern University, MEd

Lori Ashline

Assistant Teaching Professor, College of Professional Studies; Western New England University, JD

Javed A. Aslam

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Yernat Assylbekov

Zelevinsky Research Professor, Mathematics; University of Washington, PhD

Anand Asthagiri

Associate Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Polly Attwood

Associate Teaching Professor, College of Professional Studies; Harvard University, EdD

Debra Auguste

Professor, Chemical Engineering; Princeton University, PhD

Earlene Avalon

Assistant Teaching Professor, College of Professional Studies; Simmons College, PhD

Emily Avery-Miller

Assistant Teaching Professor, English; Emerson College, MFA

Cheryl Avitabile

Assistant Clinical Professor, Nursing; Massachusetts General Hospital Institute of Health Professions, DNP

Hava Avraham

Research Assistant Professor, Center for Drug Discovery; Hebrew University of Jerusalem (Israel), PhD

Joseph L. Ayers

Professor, Marine and Environmental Sciences; University of California, Santa Cruz, PhD

Sophie Bacq

Assistant Professor and Mark L. and Karen D. Vachon Faculty Fellow, Entrepreneurship and Innovation; Louvain School of Management (Belgium), PhD

Robert Baginski

Assistant Clinical Professor, Physician Assistant Program; University of Connecticut, DSc

Jianqui Bai

Assistant Professor, Finance; University of Southern California, PhD

Rekha Bai

Lecturer, Mathematics; University of Iowa, PhD

Moya Bailey

Assistant Professor, Cultures, Societies, and Global Studies and Women's, Gender, and Sexuality Studies; Emory University, PhD

Richard H. Bailey

Professor, Marine and Environmental Sciences; University of North Carolina, Chapel Hill, PhD

Ambika Bajpayee

Assistant Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Allison K. Baker

Lecturer, Psychology; Northeastern University, PhD

Shalanda Baker

Professor, Law and Public Policy and Urban Affairs; Northeastern University, JD; University of Wisconsin, LLM

Apostolia Baki

Research Assistant Professor, Pharmaceutical Sciences; University of Athens (Greece), PhD

Ilter Bakkal

Assistant Teaching Professor, Economics; Northern Illinois University, PhD

Charles Bame-Aldred

Associate Academic Specialist, Accounting; University of Massachusetts, Amherst, PhD

Benita Bamgbade

Assistant Professor, Pharmacy and Health Systems Sciences; University of Texas, Austin, PhD

Elitsa Banalieva

Associate Professor and Gary Gregg Faculty Fellow, International Business and Strategy; Indiana University, PhD

Debra Bangs

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Brendan Bannister

Associate Professor, Management and Organizational Development; Kent State University, DBA

Arun Bansil

University Distinguished Professor, Physics; Harvard University, PhD

Albert-Laszlo Barabasi

Robert Gray Dodge Professor and University Distinguished Professor, Physics and Computer and Information Science; Boston University, PhD

Emanuela Barberis

Associate Professor, Physics; University of California, Santa Cruz, PhD

Gia Barboza

Assistant Professor, Cultures, Societies, and Global Studies and International Affairs and Political Science; Michigan State University, PhD

Gloria Barczak

Professor, Marketing; Syracuse University, PhD

Sumner Barenberg

Professor of the Practice, Bioengineering; Case Western Reserve University, PhD

Emily S. Barnard

Zelevinsky Research Professor, Mathematics; North Carolina State University, PhD

Cynthia Baron

Associate Academic Specialist, College of Professional Studies; Northeastern University, MBA

Amilcar Barreto

Associate Professor, Cultures, Societies, and Global Studies and International Affairs; State University of New York, Buffalo, PhD

Lisa Barrett

University Distinguished Professor, Psychology; University of Waterloo (Canada), PhD

Margarita Barrios Ponce

Assistant Teaching Professor, Art + Design; Yale University, MFA

Carey Barry

Assistant Clinical Professor, Physician Assistant Program; Quinnipiac University, MS

Yakov Bart

Associate Professor and Thomas Moore Faculty Fellow, Marketing; University of California, Berkeley, PhD

Stefano Basagni

Associate Professor, Electrical and Computer Engineering; University of Texas, Dallas, PhD

Marla Baskerville

Associate Professor, Management and Organizational Development; Tulane University, PhD

John Basl

Assistant Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Maureen Basmajian

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MBA

Kayla Bassett

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Linnea Basu

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MS

Oleg Batishchev

Professor of the Practice, Physics; Moscow Institute of Physics and Technology (Russia), PhD

Christopher E. Beasley

Associate Professor, Mathematics; Princeton University, PhD

Nicholas Beauchamp

Assistant Professor, Political Science; New York University, PhD

Michelle A. Beauchesne

Associate Professor, Nursing; Boston University, DNSc

Mike Beaudet

Professor of the Practice, Journalism; Northeastern University, MA

Laura Beerits

Assistant Teaching Professor, English; University of Texas, Austin, PhD

Gail S. Begley

Teaching Professor, Biology; Boston University, PhD

Mehdi Behroozi

Assistant Professor, Mechanical and Industrial Engineering; University of Minnesota, PhD

Edward Beighley

Associate Professor, Civil and Environmental Engineering; University of Maryland, PhD

Chiara Bellini

Assistant Professor, Bioengineering; University of Calgary (Canada), PhD

Lynda Beltz

Assistant Teaching Professor, College of Professional Studies; Indiana University, Bloomington, PhD

Sidi Bencherif

Assistant Professor, Chemical Engineering; Carnegie Mellon University, PhD

Jonathan Benda

Associate Teaching Professor, Writing Program; Syracuse University, PhD

Elisabeth Bennett

Associate Teaching Professor, College of Professional Studies; University of Georgia, PhD

James C. Benneyan

Professor, Mechanical and Industrial Engineering; University of Massachusetts, Amherst, PhD

Iris Berent

Professor, Psychology; University of Pittsburgh, PhD

Dionisio Bernal

Professor, Civil and Environmental Engineering; University of Tennessee, PhD

Eugene A. Bernstein

Associate Teaching Professor, Pharmaceutical Sciences; Ivanovo Medical Institute (Russia), PhD

Baktybek Beshimov

Professor of the Practice, College of Professional Studies; Kyrgyz National University (Kyrgyzstan), PhD

Craig T. Bettinson

Director of Cooperative Education, College of Arts, Media and Design; Northeastern University, MEd

Penny Beuning

Associate Professor, Chemistry and Chemical Biology; University of Minnesota, PhD

Peter J. Bex

Professor, Psychology; Cardiff University (United Kingdom), PhD

Dapeng Bi

Assistant Professor, Physics; Brandeis University, PhD

Timothy Bickmore

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Brian Bicknell

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, EdD

Allan Bird

Darla and Frederick Brodsky Trustee Professor in Global Business, International Business and Strategy; University of Oregon, PhD

Priyanka Bishnoi

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Southern California, MS

Scott Bishop

Professor of the Practice, Architecture; University of Pennsylvania, MArch

Deborah Blackwell

Associate Clinical Professor, Nursing; University of Texas, DNP

Nathan Blake

Associate Teaching Professor, Media and Screen Studies; University of California, PhD

Samuel J. Blank

Professor, Mathematics; Brandeis University, PhD

Robert J. Blaser

Associate Cooperative Education Coordinator, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, MS

Martin Blatt

Professor of the Practice, History; Boston University, PhD

John Bleakney

Assistant Cooperative Education Coordinator, Graduate School of Engineering; State University of New York, Albany, MA

Francis Blessington

Professor, English; Brown University, PhD

Cameron Blevins

Assistant Professor, History; Stanford University, PhD

Aaron Block

Associate Teaching Professor, English; Emerson College, MFA

Barry Bluestone

Russell B. and Andrée B. Stearns Trustee Professor of Political Economy, Public Policy and Urban Affairs; University of Michigan, PhD

Linda Blum

Professor, Sociology and Anthropology; University of California, Berkeley, PhD

Rhonda M. Board

Associate Professor, Nursing; Ohio State University, PhD

Janet Bobcean

Associate Professor, Theatre; Ohio University, MFA

Erika Boeckeler

Assistant Professor, English; Harvard University, PhD

Geoff Boeing

Assistant Professor, Public Policy and Urban Affairs; University of California, Berkeley, PhD

Ioana Corina Bogdan

Assistant Teaching Professor, Electrical and Computer Engineering; University of Metz (France), PhD

Charles Bognanni

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MEd

Christopher Bolick

Assistant Academic Specialist, College of Professional Studies; Western Carolina University, MS

Paul J. Bolster

Professor, Finance; Virginia Polytechnic Institute, PhD

Tamara Bonaci

Lecturer, Computer and Information Science; University of Washington, PhD

Andrea Bonezzi

Assistant Professor, Marketing; Northwestern University, PhD

Lorraine A. Book

Assistant Clinical Professor, Communication Sciences and Disorders; Florida State University, PhD

Raymond G. Booth

Professor, Pharmaceutical Sciences and Chemistry and Chemical Biology; University of California, San Francisco, PhD

Monica Borgida

Assistant Teaching Professor, College of Professional Studies; University of Pisa and Bologna (Italy), PhD

Michelle Borkin

Assistant Professor, Computer and Information Science; Harvard University, PhD

Natalie Bormann

Teaching Professor, Political Science; University of Newcastle upon Tyne (United Kingdom), PhD

Jeffery A. Born

Professor, Finance; University of North Carolina, Chapel Hill, PhD

Christopher Bosso

Professor, Public Policy and Urban Affairs; University of Pittsburgh, PhD

Ekaterina Botchkovar

Associate Professor, Criminology and Criminal Justice; North Carolina State University, PhD

Kevin Boudreau

Associate Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Alma Bournazian

Associate Academic Specialist, American Sign Language; Western Maryland College, MS

Stacey Bourns

Professor, World Languages Center; University of Texas, Austin, PhD

Carla Bouwmeester

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, PharmD

Jennifer L. Bowen

Associate Professor, Marine and Environmental Sciences; Boston University, PhD

James Boyer

Assistant Academic Specialist, Accounting; Northeastern University, MBA

Nicole M. Boyson

Professor, Finance; Ohio State University, PhD

Kara Braciale

Lecturer, Art + Design; University of Illinois, Chicago, MFA

Anthony Braga

Distinguished Professor, Criminology and Criminal Justice; Rutgers University, PhD

Maxim Braverman

Professor, Mathematics; Tel Aviv University (Israel), PhD

Heather C. Brenhouse

Assistant Professor, Psychology; Northeastern University, PhD

Janet Briand-McGowan

Assistant Clinical Professor, Nursing; Northeastern University, DNP

Becky A. Briesacher

Associate Professor, Pharmacy and Health Systems Sciences; University of Maryland, Baltimore, PhD

Amy M. Briesch

Associate Professor, Applied Psychology; University of Connecticut, PhD

Elizabeth Britt

Associate Professor, English; Rensselaer Polytechnic Institute, PhD

Sharon M. Britton

Assistant Cooperative Education Coordinator, College of Engineering; Massachusetts Institute of Technology, MS

Oscar Brookins

Associate Professor, Economics; State University of New York, Buffalo, PhD

Dana H. Brooks

Professor, Electrical and Computer Engineering; Northeastern University, PhD

Cammy Brothers

Associate Professor, Architecture and Art + Design; Harvard University, PhD

Craig Brown

Visiting Associate Professor, Finance; University of Michigan, PhD

Nicholas Brown

Associate Teaching Professor, Architecture and History; University of Illinois, Urbana-Champaign, PhD

Nicholas Brown

Assistant Teaching Professor, Graduate School of Engineering; University of California, Los Angeles, PhD

Philip M. Brown

University Distinguished Professor, Sociology and Anthropology and Health Sciences; Brandeis University, PhD

Ronald Brown

Assistant Teaching Professor, College of Professional Studies; Harvard University, EdD

Timothy Brown

Professor, History; University of California, Berkeley, PhD

Todd A. Brown

Clinical Instructor, Pharmacy and Health Systems Sciences; Northeastern University, MHP

James Browning

Assistant Teaching Professor, Engineering; University of Colorado, Boulder, PhD

Maria Brucato

Assistant Teaching Professor, World Languages Center; University of Texas, PhD

Elizabeth Bucar

Associate Professor, Philosophy and Religion; University of Chicago, PhD

David E. Budil

Associate Professor, Chemistry and Chemical Biology; University of Chicago, PhD

Jamie G. Bunce

Lecturer, Behavioral Neuroscience; University of Connecticut, PhD

Lucy Bunning

Assistant Teaching Professor, College of Professional Studies; Lesley University, PhD

Jeffrey Burds

Associate Professor, History; Yale University, PhD

Lynn H. Burke

Senior Cooperative Education Coordinator, College of Arts, Media and Design; University of Massachusetts, Amherst, MEd

Pamela J. Burke

Clinical Professor, Nursing; Boston College, PhD

Jose Buscaglia

Professor, Cultures, Societies, and Global Studies; University of Buffalo, PhD

Jeremy Bushnell

Associate Teaching Professor, Writing Program; University of Arizona, Tucson, MFA

Ahmed A. Busnaina

University Distinguished Professor, William Lincoln Smith Professor of Mechanical Engineering, Mechanical and Industrial Engineering; Oklahoma State University, PhD

Bobette Buster

Professor of the Practice, Journalism; Northwestern University, MFA

Michael Butera

Clinical Instructor, Nursing; Northeastern University, MS

Qinghong Cai

Associate Teaching Professor, World Languages Center; University of Kansas, MS

Victoria Cain

Assistant Professor, History; Columbia University, PhD

Paula Caligiuri

Distinguished Professor of Global Leadership, International Business and Strategy; Pennsylvania State University, PhD

Lisa M. Campagnoni

Assistant Cooperative Education Coordinator, College of Science; Northeastern University, MA

Octavia Camps

Professor, Electrical and Computer Engineering; University of Washington, PhD

Yanet Canavan

Assistant Academic Specialist, World Languages Center; Salem State College, MA

Kristopher Cannon

Assistant Teaching Professor, Media and Screen Studies; Georgia State University, PhD

Mira Cantor

Professor, Art + Design; University of Illinois, Urbana-Champaign, MFA

Luca Caracoglia

Associate Professor, Civil and Environmental Engineering; University of Trieste (Italy), PhD

Benjamin Caras

Lecturer, Art + Design; University of Massachusetts, Amherst, MFA

Peter Cardillo

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Boston College, MS

Joelle Carlo

Assistant Teaching Professor, Pharmaceutical Sciences; State University of New York, Buffalo, PhD

Alexa A. Carlson

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Butler University, PharmD

Mary Carney

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Boston College, MSN

Heather Carpenter-Oliveira

Assistant Cooperative Education Coordinator, College of Engineering; Northeastern University, MS

Jonathan Carr

Associate Teaching Professor, Theatre; Columbia University, MFA

Michelle Carr

Lecturer, Communication Studies; Kingston University (United Kingdom), MA

Sara Carr

Assistant Professor, Architecture; University of California, Berkeley, PhD

Rebecca L. Carrier

Professor, Chemical Engineering; Massachusetts Institute of Technology, PhD

Matthew Carroll

Professor of the Practice, Journalism; Northeastern University, BS

Patricia Case

Assistant Teaching Professor, Health Sciences; Harvard University, PhD

Bonnie Jo Casey

Assistant Clinical Professor, Physician Assistant Program; University of New England, MS

Cristian Cassella

Assistant Professor, Electrical and Computer Engineering; Carnegie Mellon University, PhD

Ana-Maria Castravet

Associate Professor, Mathematics; Massachusetts Institute of Technology, PhD

Smajl Cenjic

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Cambridge College, MA

Jana Cephas

Assistant Professor, Architecture; Harvard University, PhD

Robert J. Cersosimo

Associate Professor, Pharmacy and Health Systems Sciences; University of Utah, PharmD

Christopher Cesario

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Yunrong Chai

Assistant Professor, Biology; Cornell University, PhD

Paul M. Champion

Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Chee Chan

Associate Academic Specialist, Marketing; Michigan State University, PhD

Katherine Chan

Assistant Teaching Professor, Music; University of Minnesota, PhD

Changyan Chen

Research Professor, Center for Drug Discovery; Columbia University, PhD

Qin Chen

Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Old Dominion University, PhD

Yi-Da Chen

Assistant Professor, Supply Chain and Information Management; University of Arizona, PhD

Esther Chewning

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Suffolk University, MS

Cherese Childers-McKee

Assistant Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Elizabeth A. Chilvers

Associate Professor, Cooperative Education, D'Amore-McKim School of Business; Northeastern University, MEd

W. Paul Chiou

Assistant Teaching Professor, Finance; Rutgers University, PhD

David R. Choffnes

Assistant Professor, Computer and Information Science; Northwestern University, PhD

Sam S. Choi

Associate Teaching Professor, Architecture; Harvard University, MArch

Sunho Choi

Assistant Professor, Chemical Engineering; University of Minnesota, PhD

Bartłomiej Chomanski

Visiting Lecturer, Philosophy and Religion; University of Miami, PhD

Chun-An Chou

Assistant Professor, Mechanical and Industrial Engineering; Rutgers University, PhD

Kaushik Roy Chowdhury

Associate Professor, Electrical and Computer Engineering; University of Cincinnati, MS

Ken Y. Chung

Assistant Teaching Professor, Chemistry and Chemical Biology; Michigan State University, PhD

Samuel Chung

Assistant Professor, Bioengineering; Harvard University, PhD

Hillary Chute

Professor, English and Art + Design; Rutgers University, PhD

Dawn M. Cisewski

Assistant Teaching Professor, Psychology; Indiana University of Pennsylvania, PsyD

Bruce H. Clark

Associate Professor, Marketing; Stanford University, PhD

Edmund L. Clark

Associate Academic Specialist, Entrepreneurship and Innovation; Clark University, MBA

Heather Clark

Professor, Bioengineering and Chemistry and Chemical Biology; University of Michigan, PhD

Sean I. Clark

Zelevinsky Research Professor, Mathematics; University of Virginia, PhD

Stephen B. Clark

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Alan Clayton-Matthews

Associate Professor, Public Policy and Urban Affairs and Economics; Boston College, PhD

Sandra S. Cleveland

Associate Clinical Professor, Communication Sciences and Disorders; Pennsylvania College of Optometry, AuD

William D. Clinger

Associate Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Paul Closas

Assistant Professor, Electrical and Computer Engineering; Universitat Politècnica de Catalunya (Spain), PhD

Emily Clough

Assistant Professor, Political Science and International Affairs; Harvard University, PhD

Ricardo Coelho Guerreiro Da Silva Camacho

Visiting Lecturer, Architecture; Harvard University, MArch

Dennis Cokely

Professor, American Sign Language; Georgetown University, PhD

Maxine Cokely

Associate Academic Specialist, College of Professional Studies; Bowie State University, MA

Stephanie Colbry

Assistant Teaching Professor, College of Professional Studies; Eastern University, PhD

John D. Coley

Associate Professor, Psychology; University of Michigan, PhD

Greg Collier

Professor of the Practice, Entrepreneurship and Innovation; Eastern Michigan University, MBA

Randall C. Colvin

Associate Professor, Psychology; University of Illinois, Urbana-Champaign, PhD

Sally Conant

Assistant Cooperative Education Coordinator, College of Engineering; Salve Regina University, MA

Michael Conley

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Richard Conley

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Boston University, JD

Kelly Conn

Associate Teaching Professor, College of Professional Studies; Boston University, PhD

Adam I. Cooper

Senior Lecturer, Linguistics; Cornell University, PhD

Seth Cooper

Assistant Professor, Computer and Information Science; University of Washington, PhD

Gene D. Cooperman

Professor, Computer and Information Science; Brown University, PhD

Ryan Cordell

Assistant Professor, English; University of Virginia, PhD

Marie B. Corkery

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Patricia Corrigan

Assistant Cooperative Education Coordinator, College of Science; Suffolk University, MA

Felipe Cortes

Assistant Professor, Finance; Washington University, St. Louis, PhD

Xavier Costa

Professor, Architecture; University of Pennsylvania, PhD

Hugh G. Courtney

Professor, International Business and Strategy; Massachusetts Institute of Technology, PhD

Arthur J. Coury

University Distinguished Professor, Chemical Engineering; University of Minnesota, PhD

Erin J. Cram

Professor, Biology; University of California, Berkeley, PhD

Frederick Crane

Senior Academic Specialist, Entrepreneurship and Innovation; Bradford University, PhD

Justin D. Crane

Assistant Professor, Biology; McMaster University (Canada), PhD

Steven Cranford

Assistant Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

William F. Crittenden

Professor, International Business and Strategy; University of Arkansas, PhD

Maia Cross

Associate Professor, Political Science and International Affairs; Princeton University, PhD

Robert Cross

Assistant Teaching Professor, History; Princeton University, PhD

Pedro Miguel Cruz

Assistant Professor, Art + Design; Universidade de Coimbra (Portugal), PhD

Alvaro Cuervo-Cazurra

Professor and Robert Morrison Fellow, International Business and Strategy; Massachusetts Institute of Technology, PhD

Carlos Cuevas

Associate Professor, Criminology and Criminal Justice; Alliant International University, PhD

Meng Cui

Research Associate Professor, Pharmaceutical Sciences; Jilin University (China), PhD

Thomas P. Cullinane

Professor, Mechanical and Industrial Engineering; Virginia Polytechnic Institute and State University, PhD

Derek Curry

Assistant Professor, Art + Design; University of California, Los Angeles, MFA

Mary Ellen Cushman

Professor, English; Rensselaer Polytechnic Institute, PhD

Julia Cybularz

Visiting Associate Teaching Professor, Art + Design; School of Visual Arts, MFA

Kamran Dadkhah

Associate Professor, Economics; Indiana University, PhD

Guohao Dai

Associate Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Elise J. Dallimore

Associate Professor, Communication Studies; University of Washington, PhD

James Dana Jr.

Professor, Economics and International Business and Strategy; Massachusetts Institute of Technology, PhD

Luis Dau

Associate Professor, International Business and Strategy; University of South Carolina, PhD

Geoffrey Davies

Matthews Distinguished University Professor, Chemistry and Chemical Biology; Birmingham University (United Kingdom), PhD, DSc

Duncan Davis

Assistant Teaching Professor, Engineering; North Carolina State University, PhD

Frederick C. Davis

Professor, Biology; University of Texas, Austin, PhD

Nicole Davis

Assistant Clinical Professor, Applied Psychology; Simmons College, MS

Theo Davis

Professor, English; Johns Hopkins University, PhD

Leslie Day

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Anthony P. De Ritis

Professor, Music; University of California, Berkeley, PhD

Michael Dean

Assistant Teaching Professor, College of Professional Studies; Columbia University, PhD

Adenekan (Nick) Dedeke

Lecturer, Supply Chain and Information Management; Technische Universität Kaiserslautern (Germany), PhD

Mohammad Dehghanimohammadabadi

Assistant Teaching Professor, Mechanical and Industrial Engineering; Western New England University, PhD

Candice Delmas

Assistant Professor, Philosophy and Religion and Political Science; Boston University, PhD

John Dencker

Professor, Management and Organizational Development; Harvard University, PhD

Jack Dennerlein

Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of California, PhD

Megan Denver

Assistant Professor, Criminology and Criminal Justice; University at Albany, PhD

Alexander DePaoli

Visiting Assistant Professor, Marketing; Stanford University, PhD

Leila F. Deravi

Assistant Professor, Chemistry and Chemical Biology; Vanderbilt University, PhD

Nate Derbinsky

Associate Teaching Professor, Computer and Information Science; University of Michigan, Ann Arbor, PhD

Marco Deseriis

Assistant Professor, Media and Screen Studies; New York University, PhD

Peter J. Desnoyers

Associate Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

David A. DeSteno

Professor, Psychology; Yale University, PhD

H. William Detrich

Professor, Marine and Environmental Sciences; Yale University, PhD

Darin Detwiler

Assistant Teaching Professor, College of Professional Studies; Northeastern University, PhD

John W. Devlin

Professor, Pharmacy and Health Systems Sciences; University of Toronto (Canada), PharmD

James Dew

Visiting Lecturer, Economics; Texas AM University, PhD

Janet Dewan

Assistant Clinical Professor, Nursing; Northeastern University, PhD

Alessandra Di Credico

Lecturer, Physics; University of Rome (Italy), PhD

Panagoula Diamanti-Karanou

Visiting Lecturer, Political Science and International Affairs; Northeastern University, PhD

Jacqueline Diani

Senior Cooperative Education Coordinator, Bouvé College of Health Sciences; University of Virginia, MEd

Martin Dias

Associate Teaching Professor, Supply Chain and Information Management; Bentley University, PhD

Amy DiBattista

Lecturer, Psychology; Northeastern University, PhD

William Dickens

Professor, Economics and Public Policy and Urban Affairs; Massachusetts Institute of Technology, PhD

Elizabeth Dillon

Professor, English; University of California, Berkeley, PhD

Charles DiMarzio

Associate Professor, Electrical and Computer Engineering; Northeastern University, PhD

Aidong A. Ding

Associate Professor, Mathematics; Cornell University, PhD

Kathleen C. Dioli

Associate Cooperative Education Coordinator, Chemistry and Chemical Biology; Bowling Green State University, MA

Brandon Dionne

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of New England, PharmD

Daniel L. Distel

Research Professor, Marine and Environmental Sciences; University of California, San Diego, PhD

Margarita V. DiVall

Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Mary Kate Dodgson

Assistant Professor, Accounting; University of Massachusetts, Amherst, PhD

Lisa Cantwell Doherty

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MA

Silvia Dominguez

Associate Professor, Sociology and Anthropology; Boston University, PhD

Hua Dong

Associate Academic Specialist, World Languages Center; Emerson College, MA

Pamela Donlan

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Margaret Dougherty

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, EdD

Brenda Douglas

Associate Clinical Professor, Nursing; Northeastern University, DNP

Daniel C. Douglass

Lecturer, Marine and Environmental Sciences; University of Wisconsin, PhD

Mark Douglass

Associate Clinical Professor, Pharmacy and Health Systems Sciences; University of Michigan, PharmD

Kevin Drakulich

Associate Professor, Criminology and Criminal Justice; University of Washington, PhD

Andrea Dropkin

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Bentley University, MBA

Laura Dudley

Assistant Clinical Professor, Applied Psychology; Northeastern University, PhD

Lisa Duffy

Assistant Professor, Nursing; Boston College, DNP

Tara Duffy

Lecturer, Marine and Environmental Sciences; Stony Brook University, PhD

Molly Dugan

Assistant Teaching Professor, College of Professional Studies; Boston College, PhD

Michael Dukakis

Distinguished Professor, Political Science; Harvard University, JD

Daniel M. Dulaski

Teaching Professor, Civil and Environmental Engineering; University of Massachusetts, Amherst, PhD

Catherine Dunand

Assistant Academic Specialist, World Languages Center; Boston University, MA

Jill Dupree

Visiting Lecturer, Economics; University of Colorado, Boulder, PhD

Joanne Dupuis

Assistant Clinical Professor, Nursing; Massachusetts School of Law, PhD

Kathleen Durant

Assistant Teaching Professor, Computer and Information Science; Harvard University, PhD

Jennifer G. Dy

Professor, Electrical and Computer Engineering; Purdue University, PhD

Eno Ebong

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Stephanie Eby

Lecturer, Marine and Environmental Sciences; Syracuse University, PhD

Rajagopal Echambadi

Professor, Entrepreneurship and Innovation; University of Houston, PhD

Matthew Eckelman

Assistant Professor, Civil and Environmental Engineering; Yale University, PhD

Kimberly Eddleston

Professor and Daniel and Dorothy Grady Faculty Fellow, Entrepreneurship and Innovation; University of Connecticut, PhD

Scott Edmiston

Professor of the Practice, Theatre; Boston University, MFA

Laurie Edwards

Associate Teaching Professor, Writing Program; Emerson College, MFA

Jessica Edwards George

Associate Clinical Professor, Applied Psychology; Northeastern University, PhD

Christopher L. Egan

Assistant Cooperative Education Coordinator, College of Science; Boston University, MA

Jean Egan

Senior Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MEd

Robert C. Eidson

Lecturer, Psychology; Northeastern University, PhD

Stanley J. Eigen

Professor, Mathematics; McGill University (Canada), PhD

Adam Ekenseair

Assistant Professor, Chemical Engineering; University of Texas, Austin, PhD

Ehsan Elhamifar

Assistant Professor, Computer and Information Science; Johns Hopkins University, PhD

Tina Eliassi-Rad

Associate Professor, Computer and Information Science; University of Wisconsin, Madison, PhD

B. Parker Ellen

Assistant Professor, Management and Organizational Development; Florida State University, PhD

Ryan Ellis

Assistant Professor, Communication Studies; University of California, San Diego, PhD

Constance Emerson

Assistant Academic Specialist, College of Professional Studies; Purdue University, West Lafayette, MS

John R. Engen

Distinguished Professor, Chemistry and Chemical Biology and Barnett Institute; University of Nebraska, Lincoln, PhD

Christen Enos

Associate Teaching Professor, Writing Program; Emerson College, MFA

Slava S. Epstein

Distinguished Professor, Biology; Moscow State University (Russia), PhD

Randall Erb

Assistant Professor, Mechanical and Industrial Engineering; Duke University, PhD

Deniz Erdogmus

Professor, Electrical and Computer Engineering; University of Florida, PhD

Ozlem Ergun

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Cuneyt Eroglu

Associate Professor, Supply Chain and Information Management; Ohio State University, PhD

Bilge Erten

Assistant Professor, International Affairs and Economics; University of Massachusetts, Amherst, PhD

Rhea T. Eskew

Professor, Psychology; Georgia Institute of Technology, PhD

Jonathan Esole

Assistant Professor, Mathematics; Leiden University (Netherlands), PhD

Abigail Evans

Lecturer, Computer and Information Science; University of Washington, PhD

Sara Ewell

Associate Teaching Professor, College of Professional Studies; University of North Carolina, Chapel Hill, PhD

William Ewell

Associate Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Daniel Faber

Professor, Sociology and Anthropology; University of California, Santa Cruz, PhD

Mary Lynn Fahey

Clinical Instructor, Nursing; Simmons College, MS

Olunmi Faleye

Professor and Donald F. Harding Professor of Finance and Insurance, Finance; University of Alberta (Canada), PhD

Hui Fang

Assistant Professor, Electrical and Computer Engineering; University of California, Berkeley, PhD

Qianqian Fang

Assistant Professor, Bioengineering; Dartmouth College, PhD

David Fannon

Assistant Professor, Architecture and Civil and Environmental Engineering; University of California, Berkeley, MS

Nasser S. Fard

Associate Professor, Mechanical and Industrial Engineering; University of Arizona, PhD

Amir Farhat

Associate Teaching Professor, Electrical and Computer Engineering; University of Pennsylvania, PhD

Amy Farrell

Associate Professor, Criminology and Criminal Justice; Northeastern University, PhD

Yunsi Fei

Professor, Electrical and Computer Engineering; Princeton University, PhD

Adrian E. Feiguin

Assistant Professor, Physics; Universidad Nacional de Rosario (Argentina), PhD

Allen G. Feinstein

Teaching Professor, Music; New England Conservatory of Music, MM

Nathan I. Felde

Professor, Art + Design; Massachusetts Institute of Technology, MS

Lisa Feldman Barrett

University Distinguished Professor, Psychology; University of Waterloo (Canada), PhD

Matthias Felleisen

Trustee Professor, Computer and Information Science; Indiana University, PhD

Samuel Felton

Assistant Professor, Mechanical and Industrial Engineering; Harvard University, PhD

Carol Femia

Clinical Instructor, Nursing; Massachusetts General Hospital Institute of Health Professions, MS

Hicham Fenniri

Professor, Chemical Engineering; Université de Strasbourg (France), PhD

Loretta A. Fernandez

Assistant Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Massachusetts Institute of Technology, PhD

Waththage N. Fernando

Lecturer, Mathematics; University of South Florida, PhD

Lori Ferrins

Research Assistant Professor, Chemistry and Chemical Biology; Monash University, PhD

Craig F. Ferris

Professor, Psychology and Pharmaceutical Sciences; New York Medical College, PhD

Kirsten Fertuck

Assistant Teaching Professor, Biochemistry; Michigan State University, PhD

Susan F. Fine

Clinical Instructor, Communication Sciences and Disorders; New York University, MA

Sarah Finn

Associate Teaching Professor, Writing Program; University of Massachusetts, Amherst, PhD

Branden Fitelson

Distinguished Professor, Philosophy and Religion; California Institute of Technology, PhD

Brian Fitzgerald

Assistant Professor, Accounting; Texas AM University, PhD

Joan Fitzgerald

Professor, Public Policy and Urban Affairs; Pennsylvania State University, PhD

Diane F. Fitzpatrick

Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Josephine Flanagan

Assistant Cooperative Education Coordinator, College of Engineering; Suffolk University, JD

Julia Flanders

Professor of the Practice, English and Library Systems; Brown University, PhD

Laure B. Flapan

Zelevinsky Research Professor, Mathematics; University of California, Los Angeles, PhD

Eric Folmar

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Quinnipiac University, MS

Paul Fombelle

Associate Professor and Thomas Moore Faculty Fellow, Marketing; Arizona State University, PhD

Murray Forman

Professor, Media and Screen Studies; McGill University (Canada), PhD

Lisa M. Foster

Assistant Cooperative Education Coordinator, Bouvé College of Health Sciences; Northeastern University, MS

Dimitrios Fotiadis

Lecturer, Supply Chain and Information Management; Northeastern University, MS

Brooke Foucault Welles

Assistant Professor, Communication Studies; Northwestern University, PhD

Charles F. Fountain

Professor, Journalism; Columbia University, MS

James Fox

Lipman Family Professor of Criminology, Law, and Public Policy, Criminology and Criminal Justice and Law and Public Policy; University of Pennsylvania, PhD

Laura Frader

Professor, History; University of Rochester, PhD

Debra L. Franko

Professor, Applied Psychology; McGill University (Canada), PhD

Peter Fraunholtz

Assistant Teaching Professor, History and International Affairs; Boston College, PhD

Susan Freeman

Teaching Professor, Engineering; Northeastern University, PhD

Clark Freifeld

Lecturer, Computer and Information Science; Boston University, PhD

Michael Frengel

Associate Academic Specialist, Music; City University London (United Kingdom), PhD

John H. Friar

Senior Academic Specialist, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Natasha Frost

Professor, Criminology and Criminal Justice; City University of New York, PhD

Yun (Raymond) Fu

Associate Professor, Electrical and Computer Engineering and Computer and Information Science; University of Illinois, Urbana-Champaign, PhD

Carolyn Fuchs

Teaching Professor, World Languages Center; Justus-Liebig Universität Gießen (Germany), PhD

Brian Fulton

Lecturer, Chemistry and Chemical Biology; Iowa State University, PhD

Peter G. Furth

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Timothy Gagnon

Associate Academic Specialist, Accounting; Sacred Heart University, MBA

Sean Gallagher

Assistant Clinical Professor, College of Professional Studies; Northeastern University, EdD

Susan Gallagher

Clinical Instructor, Nursing; Massachusetts General Hospital Institute of Health Professions, MS

Joshua Galloway

William O. DiPietro Assistant Professor, Chemical Engineering; Columbia University, PhD

Auroop Ganguly

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Lori Gardinier

Teaching Professor, Human Services; Northeastern University, PhD

Julie Garey

Assistant Teaching Professor, Political Science; Northeastern University, PhD

Karen Garneau

Associate Teaching Professor, Writing Program; Northeastern University, PhD

Shytierra Gaston

Assistant Professor, Criminology and Criminal Justice; University of Missouri, St. Louis, PhD

Wolfgang Gatterbauer

Associate Professor, Computer and Information Science; Vienna University of Technology (Austria), PhD

Edward Geisinger

Assistant Professor, Biology; New York University, MD, PhD

Prasanth George

Assistant Teaching Professor, Mathematics; State University of New York, Buffalo, PhD

Francis Georges

Assistant Teaching Professor, Economics; Boston College, PhD

Roger W. Giese

Professor, Pharmaceutical Sciences; Massachusetts Institute of Technology, PhD

Joseph M. Giglio

Senior Academic Specialist, International Business and Strategy; Northeastern University, PhD

Thomas R. Gilbert

Associate Professor, Chemistry and Chemical Biology; Massachusetts Institute of Technology, PhD

Laurance Ginsberg

Assistant Academic Specialist, Accounting; Bentley University, MST

Karen Giuliano

Associate Professor, Nursing; Boston College, PhD

Daniel G. Glasscock

Zelevinsky Research Professor, Mathematics; Ohio State University, PhD

Leonard J. Glick

Senior Academic Specialist, Management and Organizational Development; Harvard University, EdD

Elizabeth Glowacki

Postdoctoral Teaching Associate, Communication Studies; University of Texas, Austin, PhD

Daniel Godfrey

Professor, Music; University of Iowa, PhD

Veronica S. Godoy-Carter

Associate Professor, Biology; Tufts University, PhD

Kevin Gold

Assistant Teaching Professor, Computer and Information Science; Yale University, PhD

Natalia Gold

Assistant Teaching Professor, International Business and Strategy; Saint Petersburg State University of Engineering (Russia), PhD

Stephen Golden

Lecturer, Entrepreneurship and Innovation; Suffolk University, MBA

William Goldman

Lecturer, Accounting; Northeastern University, MBA

Ann C. Golub-Victor

Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Edgar D. Goluch

Associate Professor, Chemical Engineering; University of Illinois, Urbana-Champaign, PhD

Kathleen Gonso

Associate Teaching Professor, Writing Program; Emerson College, MFA

Michael J. Gonyeau

Clinical Professor, Pharmacy and Health Systems Sciences; Albany College of Pharmacy, PharmD

Frankie Gonzalez

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, BS

Gregory Goodale

Associate Professor, Communication Studies; University of Illinois, Urbana-Champaign, PhD

Teresa Goode

Assistant Teaching Professor, College of Professional Studies; Columbia University, EdD

Patricia Goodman

Assistant Teaching Professor, College of Professional Studies; George Washington University, EdD

Matthew Goodwin

Associate Professor, Health Sciences and Computer and Information Science; University of Rhode Island, PhD

Mark Gooley

Lecturer, Finance; Northeastern University, PhD

Ian Gorton

Professor of the Practice, Computer and Information Science; Sheffield Hallam University (United Kingdom), PhD

Gary Goshgarian

Professor, English; University of Wisconsin, Madison, PhD

Tarik C. Gouhier

Assistant Professor, Marine and Environmental Sciences; McGill University (Canada), PhD

Robson Goulart

Assistant Cooperative Education Coordinator, College of Engineering;
Boston University, MS

Andrew Gouldstone

Associate Professor, Mechanical and Industrial Engineering;
Massachusetts Institute of Technology, PhD

Jonathan H. Grabowski

Associate Professor, Marine and Environmental Sciences; University of
North Carolina, Chapel Hill, PhD

Jennifer Gradecki

Assistant Professor, Art + Design; University of California, Los Angeles,
MFA

Steve Granelli

Assistant Teaching Professor, Communication Studies; Syracuse
University, MS

Laura Green

Professor, English; University of California, Berkeley, PhD

Kristin Curry Greenwood

Associate Clinical Professor, Physical Therapy, Movement, and
Rehabilitation Sciences; Northeastern University, EdD, DPT

Brent Griffin

Assistant Teaching Professor, College of Professional Studies;
Northeastern University, PhD

Jacqueline Griffin

Assistant Professor, Mechanical and Industrial Engineering; Georgia
Institute of Technology, PhD

Joseph Griffin

Associate Teaching Professor, College of Professional Studies; Gordon
Conwell Theological Seminary, PhD

John Griffith

Clinical Professor, Health Sciences; Boston University, PhD

Amir Grinstein

Associate Professor, Mark L. and Karen D. Vachon Faculty Fellow,
Marketing; Hebrew University of Jerusalem (Israel), PhD

Francesca Grippa

Associate Teaching Professor, College of Professional Studies; University
of Salento (Italy), PhD

Craig Gruber

Associate Teaching Professor, College of Professional Studies; Clark
University, PhD

Tiantian Gu

Associate Professor, Finance; University of Wisconsin, Madison, PhD

Jason J. Guo

Research Associate Professor, Barnett Institute; University of
Connecticut, PhD

Surendra M. Gupta

Professor, Mechanical and Industrial Engineering; Purdue University, PhD

Andrei Guschin

Assistant Teaching Professor, Graduate School of Engineering; Russian
Academy of Sciences (Russian Federation), PhD

Philip Gust

Clinical Instructor, Computer and Information Science; University of
Arizona, MS

Barbara Guthrie

Professor, Nursing; New York University, PhD

Mohamed Habibullah

Assistant Teaching Professor, Supply Chain and Information
Management; University of Missouri, Columbia, PhD

David Hagen

Assistant Teaching Professor, College of Professional Studies; New
England School of Law, JD

Michelle Hagopian

Assistant Cooperative Education Coordinator, College of Arts, Media and
Design; University of Illinois, MS

Jerome F. Hajjar

CDM Smith Professor in Civil Engineering, Civil and Environmental
Engineering; Cornell University, PhD

Golnoosh Hakimdavar

Associate Teaching Professor, College of Professional Studies; University
of Turin (Italy), PhD

Danielle Haley

Assistant Professor, Health Sciences; Emory University, PhD

Judith A. Hall

University Distinguished Professor, Psychology; Harvard University, PhD

James Halverson

Assistant Professor, Physics; University of Pennsylvania, PhD

Pauline Hamel

Associate Clinical Professor, Health Sciences; Boston University, EdD

Paul Hand

Assistant Professor, Mathematics and Computer and Information
Science; New York University, PhD

Michael Handel

Associate Professor, Sociology and Anthropology; Harvard University,
PhD

Nancy Hanrahan

Professor, Nursing; Boston College, PhD

Robert N. Hanson

Matthews Distinguished University Professor, Chemistry and Chemical
Biology; University of California, Berkeley, PhD

Sharon Harlan

Professor, Health Sciences and Sociology and Anthropology; Cornell
University, PhD

Kelly Harrington

Associate Cooperative Education Coordinator, D'Amore-McKim School of
Business; Suffolk University, MBA

Shaunna Harrington

Associate Academic Specialist, College of Professional Studies; Boston
University, MA

Vincent Harris

University Distinguished Professor, William Lincoln Smith Professor of Electrical and Computer Engineering, Electrical and Computer Engineering; Northeastern University, PhD

Vanecia Harrison

Associate Cooperative Education Coordinator, College of Science; Emmanuel College, MA

Casper Harteveld

Assistant Professor, Game Design; Delft University of Technology (Netherlands), PhD

Woodrow Hartzog

Professor, Law and Computer and Information Science; University of North Carolina, Chapel Hill, PhD

Christopher Hasson

Assistant Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of Massachusetts, Amherst, PhD

Heather Hauck

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Claudia Haupt

Associate Professor, Law and Political Science; Columbia University, JSD; University of Cologne (Germany), PhD

Thomas Havens

Professor, History; University of California, Berkeley, PhD

Lorna Hayward

Associate Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Boston University, EdD

Haikun He

Assistant Academic Specialist, College of Professional Studies; Columbia University, MEd

Julia Hechtman

Lecturer, Art + Design; University of Illinois, Chicago, MFA

Meghan Heckman

Assistant Professor, Journalism; Northeastern University, MA

Gretchen Heefner

Associate Professor, History; Yale University, PhD

Donald E. Heiman

Professor, Physics; University of California, Irvine, PhD

Amy Helburn

Lorraine C. Snell Visiting Professor, Health Sciences; University of Massachusetts, PhD

Brian Helmuth

Professor, Marine and Environmental Sciences and Public Policy and Urban Affairs; University of Washington, PhD

Jason Hemann

Lecturer, Computer and Information Science; Indiana University, PhD

Carlene Hempel

Associate Teaching Professor, Journalism; University of North Carolina, Chapel Hill, MA

Dale Herbeck

Professor, Communication Studies; University of Iowa, PhD

Angela Herbert

Assistant Academic Specialist, American Sign Language; Northeastern University, BS

David A. Herlihy

Teaching Professor, Music; Boston College, JD

Catalina Herrera Almanza

Assistant Professor, Economics and International Affairs; Cornell University, PhD

Carie Hersh

Assistant Teaching Professor, Sociology and Anthropology; Duke University, JD

Kelsey Hersh

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Joshua Hertz

Assistant Teaching Professor, Engineering; Massachusetts Institute of Technology, PhD

Benjamin Hescott

Teaching Professor, Computer and Information Science; Boston University, PhD

Kamber Hetrick

Assistant Professor, Accounting; University of Illinois, Urbana-Champaign, PhD

Babak Heydari

Associate Professor, Mechanical and Industrial Engineering; University of California, Berkeley, PhD

Mary J. Hickey

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Carlos Hidrovo Chavez

Assistant Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Logan M. Higgins

Lecturer, Biology; Massachusetts Institute of Technology, PhD

Malcolm D. Hill

Associate Professor, Marine and Environmental Sciences; University of California, Santa Cruz, PhD

Charles H. Hillman

Professor, Psychology and Health Sciences; University of Maryland, College Park, PhD

Robin Hillyard

Associate Teaching Professor, Graduate School of Engineering; Cambridge University (United Kingdom), PhD

John Hinson

Assistant Teaching Professor, Theatre; Brandeis University, MFA

Tad Hirsch

Professor, Art + Design; Massachusetts Institute of Technology, PhD

Hubert Ho

Lecturer, Music; University of California, Berkeley, PhD

Marie Odile Hobeika

Postdoctoral Teaching Associate, Communication Studies; University of Pittsburgh, PhD

Lynda Hodgson

Associate Teaching Professor, College of Professional Studies; Virginia Commonwealth University, PhD

Timothy Hoff

Professor, Management and Organizational Development and Public Policy and Urban Affairs; State University of New York, Albany, PhD

Jessica Hoffman

Associate Professor, Applied Psychology; Lehigh University, PhD

Uwe Hohgrawe

Assistant Teaching Professor, College of Professional Studies; University of Wuppertal (Germany), PhD

Udi Hoitash

Associate Professor and Cowan Research Professor, Accounting; Rutgers University, PhD

Trenton Honda

Assistant Clinical Professor, Physician Assistant Program; Northeastern University, PhD

Michael J. Hoppmann

Associate Teaching Professor, Communication Studies; University of Tübingen (Germany), PhD

Adam Hosein

Associate Professor, Philosophy and Religion; Massachusetts Institute of Technology, PhD

Elizabeth M. Howard

Associate Professor, Nursing; Boston College, PhD

Jeffrey P. Howe

Assistant Professor, Journalism; Boston University, MFA

Hanchen Huang

Donald D. Smith Professor in Mechanical Engineering, Mechanical and Industrial Engineering; University of California, Los Angeles, PhD

Anne R. Hughes

Associate Professor, Marine and Environmental Sciences; University of California, Davis, PhD

Francisco Hung

Associate Professor, Chemical Engineering; North Carolina State University, PhD

Matthew Hunt

Professor, Sociology and Anthropology; Indiana University, PhD

Patrick Hurley

Assistant Professor, Accounting; University of Wisconsin, Madison, PhD

Mark Huselid

Distinguished Professor of Workforce Analytics, International Business and Strategy; State University of New York, Buffalo, PhD

Roxana E. Iacob

Research Associate Professor, Chemistry and Chemical Biology; Konstanz University (Germany), PhD

Anthony Iarrobino

Professor, Mathematics; Massachusetts Institute of Technology, PhD

Patricia Illingworth

Professor, Philosophy and Religion; University of California, San Diego, PhD; Boston University, JD

Jennifer Ingemi

Assistant Teaching Professor, Behavioral Neuroscience; University of Massachusetts, PhD

Vinay K. Ingle

Associate Professor, Electrical and Computer Engineering; Rensselaer Polytechnic Institute, PhD

Francesca Inglese

Assistant Professor, Music; Brown University, PhD

Rei Inouye

Associate Teaching Professor, World Languages Center; Temple University, PhD

Stephen S. Intille

Associate Professor, Computer and Information Science and Health Sciences; Massachusetts Institute of Technology, PhD

Efstratios Ioannidis

Assistant Professor, Electrical and Computer Engineering; University of Toronto (Canada), PhD

Roderick Ireland

Distinguished Professor, Criminology and Criminal Justice; Harvard University, LL.M.; Northeastern University, PhD

Derek M. Isaacowitz

Professor, Psychology; University of Pennsylvania, PhD

Jacqueline A. Isaacs

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Michelle L. Israel

Associate Cooperative Education Coordinator, College of Science; Northeastern University, MS

Nathan E. Israeloff

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Alexander R. Ivanov

Associate Professor, Chemistry and Chemical Biology; Russian Academy of Science, Institute of Bioorganic Chemistry (Moscow), PhD

Maura Daly Iversen

Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Harvard University, SD; Massachusetts General Hospital Institute of Health Professions, DPT

Julia Ivy

Associate Teaching Professor, International Business and Strategy; Lancaster University (United Kingdom), PhD

Denise Jackson

Associate Professor, Psychology; University of Pittsburgh, PhD

Ellen Jackson

Assistant Teaching Professor, Writing Program; Stanford University, MFA

Sarah Jackson

Assistant Professor, Communication Studies; University of Minnesota, PhD

William J. Jackson

Senior Cooperative Education Coordinator, College of Arts, Media and Design; University of Massachusetts, Boston, MEd

Michelle Jacobs

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of California, San Francisco, PharmD

Beverly Jaeger-Helton

Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Michael Jaeggli

Assistant Teaching Professor, Bioengineering; Clemson University, PhD

Nader Jalili

Professor, Mechanical and Industrial Engineering; University of Connecticut, PhD

Safa Jamali

Assistant Professor, Mechanical and Industrial Engineering; Case Western Reserve University, PhD

Bogume Jang

Lecturer, Mathematics; Purdue University, PhD

Solomon M. Jekel

Associate Professor, Mathematics; Dartmouth College, PhD

Qingying Jia

Research Assistant Professor, Chemistry and Chemical Biology; Illinois Institute of Technology, PhD

Benedict Jimenez

Associate Professor, Political Science; University of Illinois, Chicago, PhD

Holly Jimison

Professor of the Practice, Computer and Information Science and Nursing; Stanford University, PhD

Xiaoning Jin

Assistant Professor, Mechanical and Industrial Engineering; University of Michigan, PhD

Xuemin Jin

Associate Teaching Professor, Mechanical and Industrial Engineering; University of Maryland, PhD

Donghee Jo

Assistant Professor, Economics; Duke University, MA

Dinesh John

Assistant Professor, Health Sciences; University of Tennessee, PhD

Brooke Johnson

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MEd

Steven Johnson

Assistant Cooperative Education Coordinator, College of Engineering; Suffolk University, MS

Vanessa D. Johnson

Associate Professor, Applied Psychology; Western Michigan University, PhD

Kimberly Jones

Associate Teaching Professor, International Affairs; Northeastern University, PhD

Rachel Jones

Associate Professor, Nursing; New York University, PhD

Thomas Jones

Associate Professor, Sociology and Anthropology and Sociology and Anthropology; Princeton University, PhD

Dierdre Jordan

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Northeastern University, MS

Tiffany Joseph

Associate Professor, Sociology and Anthropology and International Affairs; University of Michigan, PhD

Alison Joyce

Assistant Cooperative Education Coordinator, College of Engineering; Ohio University, MEd

Maria Jump

Associate Teaching Professor, Computer and Information Science; University of Texas, Austin, PhD

Yung Joon Jung

Professor, Mechanical and Industrial Engineering; Rensselaer Polytechnic Institute, PhD

Jeffrey Juris

Associate Professor, Sociology and Anthropology; University of California, Berkeley, PhD

David R. Kaeli

College of Engineering Distinguished Professor, Electrical and Computer Engineering; Rutgers University, PhD

Sallyann Kakas

Assistant Cooperative Education Coordinator, Finance; Northeastern University, BS

Jayant Kale

Professor and Philip R. McDonald Chair, Finance; University of Texas, Austin, PhD

Sagar V. Kamarthi

Professor, Mechanical and Industrial Engineering; Pennsylvania State University, PhD

John Kane

Lecturer, Art + Design; Yale University, BA

Mary M. Kane

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; University of Massachusetts, Boston, MEd

Michael Kane

Assistant Professor, Civil and Environmental Engineering; University of Michigan, PhD

Sarah Kanouse

Associate Professor, Art + Design; University of Illinois, Urbana-Champaign, MFA

Carla Kaplan

Davis Distinguished Professor in American Literature, English and Women's, Gender, and Sexuality Studies; Northwestern University, PhD

Swastik Kar

Associate Professor, Physics; Indian Institute of Physics (India), PhD

Samina Karim

Professor, Entrepreneurship and Innovation; University of Michigan, PhD

Alain S. Karma

College of Arts and Sciences Distinguished Professor, Physics; University of California, Santa Barbara, PhD

Edward Katz

Associate Teaching Professor, Computer and Information Science; University of Louisiana, Lafayette, PhD

Ralph Katz

Professor, Entrepreneurship and Innovation; University of Pennsylvania, PhD

Jonathan Kaufman

Professor, Journalism; Harvard University, MA

William Kay

Associate Professor, Political Science; Indiana University, PhD

Bret Keeling

Associate Teaching Professor, Writing Program; University of Washington, PhD

Maureen Kelleher

Associate Professor, Sociology and Anthropology; University of Missouri, Columbia, PhD

Karen P. Kelley

Senior Cooperative Education Coordinator, College of Engineering; Northeastern University, MEd

Ryann Kelley

Associate Cooperative Education Coordinator, Finance; Northeastern University, MEd

Thomas M. Kelley

Lecturer, Physics; University of Minnesota, PhD

Kathleen Kelly

Professor, English; University of North Carolina, Chapel Hill, PhD

Mary Kelting

Associate Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Daniel D. Kennedy

Associate Professor, Journalism; Boston University, MLA

Aileen Kent Yates

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Massachusetts, Amherst, BA

Heidi Kevoe Feldman

Associate Professor, Communication Studies; Rutgers University, PhD

Leila Keyvani Someh

Assistant Teaching Professor, Engineering; Northeastern University, PhD

Ban-An Khaw

Professor, Pharmaceutical Sciences; Boston College, PhD

Konstantin Khrapko

Professor, Biology and Pharmaceutical Sciences; Engelhardt Institute of Molecular Biology, Moscow (Russia), PhD

Ilham Khuri-Makdisi

Associate Professor, History; Harvard University, PhD

Sheri Kiami

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Simmons College, DPT

Angela Kilby

Assistant Professor, Economics; Massachusetts Institute of Technology, PhD

Daniel Kim

Associate Professor, Health Sciences; University of Toronto (Canada), MD; Harvard University, PhD

Eunsong Kim

Assistant Professor, English; University of Texas, Austin, PhD

Jonghan Kim

Assistant Professor, Pharmaceutical Sciences; Ohio State University, PhD

Miso Kim

Assistant Professor, Art + Design; Carnegie Mellon University, PhD

Nancy S. Kim

Associate Professor, Psychology; Yale University, PhD

Somy Kim

Associate Teaching Professor, Writing Program; University of California, San Diego, PhD

Tiffany Kim

Assistant Clinical Professor, Nursing; University of Pennsylvania, PhD

Yong-Bin Kim

Professor, Electrical and Computer Engineering; Colorado State University, PhD

John Kimani

Assistant Teaching Professor, Electrical and Computer Engineering; University of Wisconsin, Milwaukee, PhD

David L. Kimbro

Assistant Professor, Marine and Environmental Sciences; University of California, Davis, PhD

Nancy Kimelman

Assistant Teaching Professor, Economics; Brown University, PhD

Nancy Kindelan

Professor, Theatre; University of Wisconsin, Madison, PhD

Christopher K. King

Professor, Mathematics; Harvard University, PhD

Donald R. King

Associate Professor, Mathematics; Massachusetts Institute of Technology, PhD

Margaret Kirchoff

Assistant Teaching Professor, College of Professional Studies; George Washington University, EdD

Engin Kirda

Professor, Computer and Information Science and Electrical and Computer Engineering; Technical University of Vienna (Austria), PhD

Rein U. Kirss

Associate Professor, Chemistry and Chemical Biology; University of Wisconsin, Madison, PhD

Jennifer L. Kirwin

Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Risa Kitagawa

Assistant Professor, Political Science and International Affairs; Stanford University, PhD

Mark Kjellman

Assistant Teaching Professor, Writing Program; Boston University, PhD

Alan Klein

Professor, Sociology and Anthropology; State University of New York, Buffalo, PhD

Sarah Klionsky

Assistant Cooperative Education Coordinator, College of Science; University of Wisconsin, Madison, MA

Kristian Kloeckl

Associate Professor, Art + Design and Architecture; University of Venice (Italy), PhD

Thomas Koenig

Professor, Sociology and Anthropology; University of California, Santa Barbara, PhD

Mieczyslaw M. Kokar

Professor, Electrical and Computer Engineering; University of Wroclaw (Poland), PhD

Tali Konry

Assistant Professor, Pharmaceutical Sciences; Ben Gurion University (Israel), PhD

Constantin Konstantopoulos

Associate Teaching Professor, Graduate School of Engineering; Boston University, PhD

Abigail N. Koppes

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Ryan Koppes

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Sarah Kostanski

Assistant Cooperative Education Coordinator, College of Engineering; Framingham State University, MS

Ilka Kostka

Assistant Teaching Professor, College of Professional Studies; New York University, PhD

Harilaos Koutsopoulos

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Linda Kowalcky

Professor of the Practice, Public Policy and Urban Affairs; Johns Hopkins University, PhD

Gregory J. Kowalski

Associate Professor, Mechanical and Industrial Engineering; University of Wisconsin, Madison, PhD

Sergey Kravchenko

Professor, Physics; Institute of Solid State Physics (Russia), PhD

Caroline Krehbiel

Visiting Assistant Professor, Applied Psychology; Lehigh University, PhD

Dmitri Krioukov

Associate Professor, Physics; Old Dominion University, PhD

Ganesh Krishnamoorthy

Professor, Accounting; University of Southern California, PhD

Karthik Krishnan

Associate Professor, Finance; Boston College, PhD

Louis J. Kruger

Associate Professor, Applied Psychology; Rutgers University, PsyD

Laura Kuhl

Assistant Professor, Public Policy and Urban Affairs and International Affairs; Tufts University, PhD

Abhishek Kumar

Assistant Teaching Professor, Mechanical and Industrial Engineering; University of Michigan, PhD

Venkat Kuppuswamy

Assistant Professor, Entrepreneurship and Innovation; Harvard Business School, DBA

Jessica Kurr

Postdoctoral Teaching Associate, Communication Studies; Pennsylvania State University, PhD

Steven R. Kursh

Associate Academic Specialist, Finance; University of Pennsylvania, PhD

John Kwoka

Neal F. Finnegan Distinguished Professor, Economics; University of Pennsylvania, PhD

Michelle Laboy

Assistant Professor, Architecture; University of Michigan, MArch

John LaBrie

Professor of the Practice, College of Professional Studies; University of Pennsylvania, EdD

Jamie Ladge

Associate Professor, Management and Organizational Development; Boston College, PhD

Jay Laird

Assistant Teaching Professor, College of Professional Studies; Lesley University, MFA

Venkatraman Lakshmi

Professor, Mathematics; Tata University (India), PhD

Charlotte Lam

Assistant Cooperative Education Coordinator, College of Science; California State University, Sacramento, MA

Joan LaMachia

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Boston College, MEd

Anna Lamin

Associate Professor and Matthew Eagan Faculty Fellow, International Business and Strategy; University of Minnesota, PhD

Jason Lancaster

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, PharmD

William Lancaster

Senior Lecturer, Communication Studies; Michigan State University, MA

Lucas J. Landherr

Associate Teaching Professor, Chemical Engineering; Cornell University, PhD

Theodore Landsmark

Distinguished Professor, Public Policy and Urban Affairs; Boston University, PhD

Henry W. Lane

Professor, International Business and Strategy; Harvard University, DBA

David Lang

Lecturer, Mathematics; Boston College, PhD; Northeastern University, PhD

Timothy Lannin

Assistant Teaching Professor, Bioengineering; Cornell University, PhD

Amy Lantinga

Associate Teaching Professor, College of Professional Studies; University of Tennessee, EdD

Denise Lapon Garcia

Associate Professor, Political Science and International Affairs; University of Geneva (Switzerland), PhD

Philip Larese-Casanova

Associate Professor, Civil and Environmental Engineering; University of Iowa, PhD

Sonya L. Larrieux

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Barbara Larson

Associate Academic Specialist, Management and Organizational Development; Harvard Business School, DBA

Elizabeth Larson

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MBA

Kimberly Larson

Associate Teaching Professor, College of Professional Studies; Drexel University, PhD

Felicia G. Lassk

Associate Professor, Marketing; University of South Florida, PhD

Amanda Reeser Lawrence

Associate Professor, Architecture; Harvard University, PhD

David M. Lazer

Distinguished Professor, Political Science and Computer and Information Science; University of Michigan, Ann Arbor, PhD

Christina Lee

Assistant Professor, Applied Psychology; New York University, PhD

Cynthia Lee

Professor, Management and Organizational Development; University of Maryland, PhD

Doreen Lee

Associate Professor, Sociology and Anthropology; Cornell University, PhD

Jung Lee

Associate Professor, Philosophy and Religion; Brown University, PhD

Kristen Lee

Associate Teaching Professor, College of Professional Studies; Northeastern University, EdD

Lee-Peng Lee

Lecturer, Mathematics; Massachusetts Institute of Technology, PhD

Matt Lee

Teaching Professor, Human Services; University of Illinois, Urbana-Champaign, PhD

Yang W. Lee

Associate Professor, Supply Chain and Information Management; Massachusetts Institute of Technology, PhD

Carolyn W. T. Lee-Parsons

Associate Professor, Chemical Engineering and Chemistry and Chemical Biology; Cornell University, PhD

Miriam E. Leeser

Professor, Electrical and Computer Engineering; Cambridge University (United Kingdom), PhD

Laurel Leff

Associate Professor, Journalism; Yale University, MA

Lori Lefkowitz

Ruderman Professor of Jewish Studies, Jewish Studies and English; Brown University, PhD

Patrick Legros

Distinguished Professor, Economics; California Institute of Technology, PhD

Bradley M. Lehman

Professor, Electrical and Computer Engineering; Georgia Institute of Technology, PhD

Robert Lentz

Associate Academic Specialist, Entrepreneurship and Innovation; Babson College, MBA

Benjamin Lerner

Assistant Teaching Professor, Computer and Information Science; University of Washington, PhD

Neal Lerner

Professor, English; Boston University, EdD

Marina Leslie

Associate Professor, English; Yale University, PhD

Hanoch Lev-Ari

Professor, Electrical and Computer Engineering; Stanford University, PhD

Danielle Levac

Assistant Professor, Physical Therapy, Movement, and Rehabilitation Sciences; McMaster University (Canada), PhD

Tatyana Levchenko

Research Assistant Professor, Pharmaceutical Sciences; Academy of Medical Sciences Moscow (Russia), PhD

Yiannis A. Leventis

College of Engineering Distinguished Professor, Mechanical and Industrial Engineering; California Institute of Technology, PhD

Elinor Levine

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; University of Massachusetts, Amherst, MEd

Herbert Levine

Professor, Physics and Bioengineering; Princeton University, PhD

Kim Lewis

University Distinguished Professor, Biology; Moscow University (Russia), PhD

Laura H. Lewis

Cabot Professor, Chemical Engineering and Mechanical and Industrial Engineering; University of Texas, Austin, PhD

David J. Lewkowicz

Professor, Communication Sciences and Disorders; City University of New York, Hunter College, PhD

Ang Li

Assistant Professor, Architecture; Princetown University, MArch

Chieh Li

Associate Professor, Applied Psychology; University of Massachusetts, Amherst, EdD

Rui Li

Associate Clinical Professor, Health Sciences; Baylor University, PhD

Robert Lieb

Professor, Supply Chain and Information Management; University of Maryland, DBA

Karl J. Lieberherr

Professor, Computer and Information Science; Eidgenössische Technische Hochschule Zürich (Switzerland), PhD

Karin N. Lifter

Professor, Applied Psychology; Columbia University, PhD

Xue Lin

Assistant Professor, Electrical and Computer Engineering; University of Southern California, PhD

Yingzi Lin

Associate Professor, Mechanical and Industrial Engineering; University of Saskatchewan (Canada), PhD

Alisa K. Lincoln

Professor, Sociology and Anthropology and Health Sciences; Columbia University, PhD

Katherine Lind

Postdoctoral Teaching Associate, Communication Studies; Indiana University, PhD

John J. Lindhe

Senior Lecturer, Mathematics; Northeastern University, MA

Gabor P. Lippner

Assistant Professor, Mathematics; Eotvos University (Hungary), PhD

James Lipsky

Associate Academic Specialist, American Sign Language; Boston University, MA

Heather A. Littlefield

Associate Teaching Professor, Linguistics; Boston University, PhD

Kelvin Liu

Associate Professor, Accounting; University of South Carolina, PhD

Xiaoping Liu

Visiting Assistant Professor, Supply Chain and Information Management; University of Massachusetts, Lowell, PhD

Yang Liu

Assistant Professor, Mechanical and Industrial Engineering; Columbia University, PhD

Yongmin Liu

Assistant Professor, Mechanical and Industrial Engineering and Electrical and Computer Engineering; University of California, Berkeley, PhD

Ioannis Livanis

Associate Teaching Professor, International Affairs and Political Science; University of Florida, PhD

Carol Livermore

Associate Professor, Mechanical and Industrial Engineering; Harvard University, PhD

Martha Loftus

Assistant Teaching Professor, College of Professional Studies; Harvard University, EdD

Diomedes E. Logothetis

Professor, Pharmaceutical Sciences; Harvard University, PhD

Mark Lomanno

Visiting Assistant Teaching Professor, Music; University of Texas, Austin, PhD

Fabrizio Lombardi

International Test Conference Professor, Electrical and Computer Engineering; University of London (United Kingdom), PhD

Marissa Lombardi

Assistant Teaching Professor, College of Professional Studies; Northeastern University, EdD

Guido Lopez

Associate Teaching Professor, College of Professional Studies;
Northeastern University, PhD

Steven A. Lopez

Assistant Professor, Chemistry and Chemical Biology; University of
California, Los Angeles, PhD

Connie Lorette

Assistant Clinical Professor, Nursing; Boston College, PhD

Ralph H. Loring

Associate Professor, Pharmaceutical Sciences; Cornell University, PhD

Ivan Loseu

Professor, Mathematics; Moscow State University (Russia), PhD

Daniel Lothian

Visiting Scholar, Journalism; American University, MA

Kathleen E. Lotterhos

Assistant Professor, Marine and Environmental Sciences; Florida State
University, PhD

Salim A. Lotuff III

Teaching Professor, Communication Studies; Northeastern University, MA

Deirdre Loughridge

Assistant Professor, Music; University of Pennsylvania, PhD

Jennifer O. Love

Associate Academic Specialist, Engineering; University of Iowa, MS

Timothy Love

Associate Professor, Architecture; Harvard University, MArch

William Lovely

Assistant Academic Specialist, International Business and Strategy;
Northeastern University, DLP

Amy Shirong Lu

Assistant Professor, Communication Studies and Health Sciences;
University of North Carolina, Chapel Hill, PhD

Long Lu

Assistant Professor, Computer and Information Science; Georgia Institute
of Technology, PhD

Mary Ludden

Assistant Teaching Professor, College of Professional Studies; Walden
University, PhD

Razvan Lungeanu

Assistant Professor, Entrepreneurship and Innovation; Northwestern
University, PhD

Katherine Luongo

Associate Professor, History; University of Michigan, Ann Arbor, PhD

Steven Lustig

Associate Professor, Chemical Engineering; Purdue University, PhD

David E. Luzzi

Professor, Mechanical and Industrial Engineering; Northwestern
University, PhD

Vasiliki Lykourinou

Assistant Teaching Professor, Chemistry and Chemical Biology;
University of South Florida, PhD

Jun Ma

Associate Professor, Economics; University of Washington, PhD

Kayse Maass

Assistant Professor, Mechanical and Industrial Engineering; University of
Michigan, PhD

Patricia A. Mabrouk

Professor, Chemistry and Chemical Biology; Massachusetts Institute of
Technology, PhD

Esther MacKenzie

Visiting Clinical Instructor, Nursing; Boston University, MA

Andrew Mackie

Assistant Clinical Professor, Physician Assistant Program; University of
Nebraska, MS

Emanuele Macri

Associate Professor, Mathematics; SISSA (Italy), PhD

Jeanne Madden

Associate Professor, Pharmacy and Health Systems Sciences; Harvard
University, PhD

Kristin Madison

Professor, Health Sciences and Law; Stanford University, PhD

Tracy Magee

Assistant Clinical Professor, Nursing; Boston College, PhD

Bala Maheswaran

Teaching Professor, Engineering; Northeastern University, PhD

Debra Mahfouz

Associate Clinical Professor, Pharmacy and Health Systems Sciences;
University of Rhode Island, PharmD

Elizabeth Mahler

Associate Teaching Professor, College of Professional Studies; George
Washington University, EdD

Luigia Maiellaro

Teaching Professor, World Languages Center; Russian State University
for the Humanities (Russia), PhD

Lee Makowski

Professor, Bioengineering and Chemistry and Chemical Biology;
Massachusetts Institute of Technology, PhD

Purnima Makris

Associate Professor, Electrical and Computer Engineering;
Massachusetts Institute of Technology, PhD

Alexandros Makriyannis

George D. Behrakis Chair and Professor, Center for Drug Discovery and
Chemistry and Chemical Biology; University of Kansas, PhD

Michael Malamas

Research Associate Professor, Center for Drug Discovery and Chemistry
and Chemical Biology; University of Pennsylvania, PhD

Mario Maletta

Professor, Accounting; University of Massachusetts, Amherst, PhD

Shiti Malhotra

Lecturer, Linguistics; University of Maryland, PhD

Veronika Maliborska

Assistant Teaching Professor, College of Professional Studies; Purdue University, PhD

Mikhail B. Malioutov

Professor, Mathematics; Moscow State University (Russia), PhD

Andrew Mall

Assistant Professor, Music; University of Chicago, PhD

Craig E. Maloney

Associate Professor, Mechanical and Industrial Engineering; University of California, Santa Barbara, PhD

Roman Manetsch

Associate Professor, Chemistry and Chemical Biology and Pharmaceutical Sciences; University of Basel (Switzerland), PhD

John Manfredelli

Professor of the Practice, Computer and Information Science; University of California, Berkeley, PhD

Swapnil Maniar

Professor of the Practice, Health Sciences; Johns Hopkins University, PhD

Justin Manjourides

Assistant Professor, Health Sciences; Harvard University, PhD

Emily Mann

Teaching Professor, Human Services; University of Wisconsin, Madison, PhD

James M. Manning

Professor, Biology; Tufts University, PhD

Peter Manning

Elmer V.H. and Eileen M. Brooks Chair in Policing, Criminology and Criminal Justice; Duke University, PhD

Maira Mannix Votel

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Columbia University, MA

Peter Manolios

Professor, Computer and Information Science; University of Texas, Austin, PhD

Valentina Marano

Assistant Professor, International Business and Strategy; University of South Carolina, PhD

Janice Maras

Assistant Teaching Professor, Health Sciences; Northeastern University, EdD

Krassimir Marchev

Professor of the Practice, College of Professional Studies; Northeastern University, PhD

Edwin Marengo Fuentes

Associate Professor, Electrical and Computer Engineering; Northeastern University, PhD

Donald G. Margotta

Associate Professor, Finance; University of North Carolina, Chapel Hill, PhD

Alina Marian

Professor, Mathematics; Harvard University, PhD

Tucker Marion

Associate Professor, Entrepreneurship and Innovation; Pennsylvania State University, PhD

Robert S. Markiewicz

Professor, Physics; University of California, Berkeley, PhD

Alycia Markowski

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Mindy Marks

Associate Professor, Economics; Washington University, PhD

Stacy Marsella

Professor, Computer and Information Science and Psychology; Rutgers University, PhD

Ineke Marshall

Professor, Sociology and Anthropology and Criminology and Criminal Justice; Bowling Green State University, PhD

Dayna L. Martinez

Assistant Teaching Professor, Mechanical and Industrial Engineering; University of South Florida, Tampa, PhD

Ramiro Martinez

Professor, Criminology and Criminal Justice and Sociology and Anthropology; Ohio State University, PhD

José Angel Martínez-Lorenzo

Assistant Professor, Mechanical and Industrial Engineering and Electrical and Computer Engineering; Universidad de Vigo (Spain), PhD

Alexander Martsinkovsky

Associate Professor, Mathematics; Brandeis University, PhD

David Massey

Professor, Mathematics; Duke University, PhD

Jude E. Mathews

Associate Teaching Professor, Chemistry and Chemical Biology; Clemson University, PhD

Kristen Mathieu Gonzalez

Clinical Instructor, Nursing; University of Phoenix, MS

Daniele Mathras

Assistant Professor, Marketing; Arizona State University, PhD

Thomas M. Matta

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Xavier University of Louisiana, PharmD

Carla Mattos

Professor, Chemistry and Chemical Biology; Massachusetts Institute of Technology, PhD

Lucy Maulsby

Associate Professor, Architecture; Columbia University, PhD

Ernest Mauristhene

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Hardin-Simmons University, MBA

Jessica Maxwell

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Boston University, PhD; Massachusetts General Hospital Institute of Health Professions, DPT

William Mayer

Professor, Political Science; Harvard University, PhD

Mary Mayville

Assistant Clinical Professor, Nursing; Northeastern University, DNP

Dori P. Mazor

Associate Cooperative Education Coordinator, College of Arts, Media and Design; Brandeis University, MBA

Charn McAllister

Assistant Professor, Management and Organizational Development; Florida State University, PhD

Michelle McAllister

Visiting Assistant Professor, Accounting; Florida State University, PhD

Laurie McCadden

Clinical Instructor, Nursing; University of Massachusetts, Lowell, MSN

Paulette McCarty

Assistant Academic Specialist, Management and Organizational Development; University of Tennessee, PhD

Jane McCool

Assistant Clinical Professor, Nursing; University of Rhode Island, PhD

Al McCready

Assistant Teaching Professor, College of Professional Studies; George Washington University, PhD

Eileen McDonagh

Professor, Political Science; Harvard University, PhD

Ann McDonald

Associate Professor, Art + Design; Yale University, MFA

Matthew McDonald

Associate Professor, Music; Yale University, PhD

Brianne McDonough

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Salem State University, MS

Melissa McElligott

Assistant Teaching Professor, Biology; Northeastern University, PhD

Seamus McGovern

Lecturer, Supply Chain and Information Management; Northeastern University, PhD

Nicol E. McGruer

Professor, Electrical and Computer Engineering; Michigan State University, PhD

Jean McGuire

Professor of the Practice, Health Sciences; Brandeis University, PhD

Hugh McManus

Associate Teaching Professor, Mechanical and Industrial Engineering; Stanford University, PhD

Cristine McMartin-Miller

Associate Teaching Professor, College of Professional Studies; Purdue University, PhD

Joseph McNabb

Professor of the Practice, College of Professional Studies; Northeastern University, PhD

Robert C. McOwen

Professor, Mathematics; University of California, Berkeley, PhD

Frances Nelson McSherry

Teaching Professor, Theatre; New York University, MFA

Iraz Mehdi

Assistant Cooperative Education Coordinator, College of Engineering; California State University, Long Beach, MS

Emanuel S. Melachrinoudis

Professor, Mechanical and Industrial Engineering; University of Massachusetts, Amherst, PhD

Waleed Meleis

Associate Professor, Electrical and Computer Engineering; University of Michigan, PhD

Susan L. Mello

Assistant Professor, Communication Studies; University of Pennsylvania, PhD

Tina J. Mello

Assistant Cooperative Education Coordinator, College of Science; Boston College, MA

Richard H. Melloni Jr.

Professor, Psychology; University of Massachusetts, PhD

Tommaso Melodia

Associate Professor, Electrical and Computer Engineering; Georgia Institute of Technology, PhD

Latika Menon

Associate Professor, Physics; Tata Institute of Fundamental Research, Bombay (India), PhD

Francisco Mesch

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Washington State University, MS

Hameed Metghalchi

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, ScD

Laura Meyer

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Cleveland State University, MEd

Marc H. Meyer

Robert J. Shillman Professor of Entrepreneurship and Matthews Distinguished University Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Michael Meyer

Associate Teaching Professor, Philosophy and Religion; Boston University, PhD

Ningfang Mi

Associate Professor, Electrical and Computer Engineering; University of Texas, Dallas, MS

Vidoje Mihajlovikj

Lecturer, Computer and Information Science; Clarkson University, PhD

Lara Milane

Assistant Teaching Professor, Pharmaceutical Sciences; Northeastern University, PhD

Loiza Miles

Assistant Academic Specialist, World Languages Center; Sorbonne University (France), MA

William Miles

Professor, Political Science; Tufts University, PhD

Danielle M. Miller

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Edward Miller

Assistant Teaching Professor, College of Professional Studies; Boston College, PhD

Gregory Miller

Associate Professor, Pharmaceutical Sciences; University of New York, PhD

Heather Miller

Assistant Clinical Professor, Computer and Information Science; Ecole Polytechnique Federale de Lausanne (Switzerland), PhD

Joanne L. Miller

Matthews Distinguished University Professor, Psychology; University of Minnesota, PhD

Matthew Miller

Professor, Health Sciences; Yale University, MD; Harvard University, ScD

Renee Miller

Distinguished Professor, Computer and Information Science; University of Wisconsin, Madison, PhD

Ennio Mingolla

Professor, Communication Sciences and Disorders; University of Connecticut, PhD

Marilyn L. Minus

Associate Professor, Mechanical and Industrial Engineering; Georgia Institute of Technology, PhD

Alan Mislove

Associate Professor, Computer and Information Science; Rice University, PhD

Cheryl Mitteness

Academic Specialist, Entrepreneurship and Innovation; University of Louisville, PhD

Nancy Mizzoni

Clinical Instructor, Nursing; Northeastern University, MS

Anahit Mkrtchyan

Assistant Professor, Finance; Pennsylvania State University, PhD

Sarah Mockler

Assistant Cooperative Education Coordinator, College of Engineering; Boston College, MA

Alicia Modestino

Associate Professor, Public Policy and Urban Affairs and Economics; Harvard University, PhD

Valentine Moghadam

Professor, International Affairs; American University, PhD

Mohsen Moghaddam

Assistant Professor, Mechanical and Industrial Engineering; Purdue University, PhD

Shan Mohammed

Associate Clinical Professor, Health Sciences; Case Western Reserve University, MD

Changiz Mohiyeddini

Associate Professor, Applied Psychology; University of Trier (Germany), PsyD

Beth Molnar

Associate Professor, Health Sciences; Harvard University, ScD

James Monaghan

Assistant Professor, Biology; University of Kentucky, PhD

Yasmil Montes

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Cambridge College, MS

Susan F. Montgomery

Senior Academic Specialist, Entrepreneurship and Innovation and Law; Northeastern University, JD

Robert M. Mooradian

Professor and Harding Research Professor, Finance; University of Pennsylvania, PhD

Rebekah Moore

Visiting Assistant Professor, Music; Indiana University, PhD

Enrique F. Moreno

Senior Lecturer, Physics; Universidad Nacional de La Plata (Argentina), PhD

Kimberly Moreno

Professor, Accounting; University of Massachusetts, Amherst, PhD

Joanne Morreale

Associate Professor, Media and Screen Studies; Temple University, PhD

Mounira Morris

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, Amherst, EdD

Kristen Morse

Assistant Cooperative Education Coordinator, Bouvé College of Health Sciences; Ithaca College, DPT

Hossein Mosallaei

Professor, Electrical and Computer Engineering; University of California, Los Angeles, PhD

Edward Moss

Associate Teaching Professor, Writing Program; Emerson College, MFA

Lorraine Ann Mountain

Senior Cooperative Education Coordinator, College of Engineering; Tufts University, MS

Amy Mueller

Assistant Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Massachusetts Institute of Technology, PhD

Sinan Muftu

Professor, Mechanical and Industrial Engineering; University of Rochester, PhD

Tania Muino

Assistant Academic Specialist, World Languages Center; University of Barcelona (Spain), MA

Sanjeev Mukerjee

Professor, Chemistry and Chemical Biology; Texas AM University, PhD

Jay Mulki

Associate Professor, Marketing; University of South Florida, PhD

Anthony Mullen

Associate Teaching Professor, Computer and Information Science; University of Groningen (Netherlands), PhD

Patrick Mullen

Associate Professor, English; University of Pittsburgh, PhD

Seth Mulliken

Assistant Teaching Professor, Media and Screen Studies; North Carolina State University, PhD

Samuel E. Munoz

Assistant Professor, Marine and Environmental Sciences and Civil and Environmental Engineering; University of Wisconsin, Madison, PhD

Kellianne Murphy

Senior Cooperative Education Coordinator, College of Arts, Media and Design; Northeastern University, MA

Lauren A. Murphy

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Portland State University, PhD

Robert Murray

Assistant Academic Specialist, Supply Chain and Information Management; Harvard Business School, MBA

Shashi K. Murthy

Professor, Chemical Engineering; Massachusetts Institute of Technology, PhD

Hande Musdal Odemir

Assistant Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Cecelia Musselman

Associate Teaching Professor, Writing Program; Columbia University, PhD

Shakir Mustafa

Teaching Professor, World Languages Center; Boston University, PhD

Andrew Myers

Associate Professor, Civil and Environmental Engineering; Stanford University, PhD

David Myers

Associate Teaching Professor, Finance; University of Washington, PhD

Laura Mylott

Clinical Professor, Nursing; Boston College, PhD

Nada Naji

Lecturer, Computer and Information Science; University of Neuchatel (Switzerland), PhD

Thomas K. Nakayama

Professor, Communication Studies; University of Iowa, PhD

Laurie Nardone

Associate Teaching Professor, English; Emory University, PhD

Pran Nath

Matthews Distinguished University Professor, Physics; Stanford University, PhD

Hamid Nayeb-Hashemi

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Collette Ncube

Assistant Professor, Health Sciences; University of Pittsburgh, PhD

Brent Nelson

Associate Professor, Physics; University of California, Berkeley, PhD

Carl W. Nelson

Associate Professor, International Business and Strategy; University of Manchester (United Kingdom), PhD

Laura Nelson

Assistant Professor, Sociology and Anthropology; University of California, Berkeley, PhD

Huy Nguyen

Assistant Professor, Computer and Information Science; Princeton University, PhD

Julie Nguyen

Assistant Cooperative Education Coordinator, College of Engineering; Columbia University, MA

Jennifer Nichol

Assistant Professor, Accounting; University of Illinois, Urbana-Champaign, PhD

Sandy Nickel

Assistant Teaching Professor, College of Professional Studies; University of Iowa, PhD

Mark J. Niedre

Associate Professor, Bioengineering; University of Toronto (Canada), PhD

Spyridon Nikas

Research Associate Professor, Center for Drug Discovery; Aristotle University (Greece), PhD

Jelena Nikolic

Assistant Teaching Professor, Economics; Nottingham University (United Kingdom), PhD

Matthew Nippins

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Matthew C Nisbet

Professor, Communication Studies; Cornell University, PhD

Cristina Nita-Rotaru

Professor, Computer and Information Science; Johns Hopkins University, PhD

Daniel Noemi Voionmaa

Associate Professor, Cultures, Societies, and Global Studies; Yale University, PhD

Alison Nogueira

Associate Cooperative Education Coordinator, College of Engineering; Suffolk University, MEd

David Nolan

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Kimberly Nolan

Assistant Teaching Professor, College of Professional Studies; University of Vermont, EdD

Carey Noland

Associate Professor, Communication Studies; Ohio University, PhD

Ellen Noonan

Associate Teaching Professor, Writing Program; Emerson College, MFA

Matthew Noonan

Associate Teaching Professor, Writing Program; Massachusetts College of Art, MFA

Guevara Noubir

Professor, Computer and Information Science; Swiss Federal Institute of Technology, Lausanne (Switzerland), PhD

Gilbert Nyaga

Associate Professor and Joe Dichiacchio Faculty Fellow, Supply Chain and Information Management; Michigan State University, PhD

Daniel O'Brien

Assistant Professor, Public Policy and Urban Affairs and Criminology and Criminal Justice; Binghamton University, PhD

Brian O'Connell

Assistant Teaching Professor, Engineering; Tufts University, PhD

Donica O'Malley

Postdoctoral Teaching Associate, Communication Studies; University of Pittsburgh, PhD

Jessica Oakes

Assistant Professor, Bioengineering; University of California, San Diego, PhD

Antonio Ocampo-Guzman

Associate Professor, Theatre; York University (Canada), MFA

Curtis Odum

Visiting Lecturer, Management and Organizational Development; Pepperdine University, EdD

Dietmar Offenhuber

Assistant Professor, Art + Design and Public Policy and Urban Affairs; Massachusetts Institute of Technology, PhD

Marvin Onabajo

Assistant Professor, Electrical and Computer Engineering; Texas AM University, PhD

Kay Onan

Associate Professor, Chemistry and Chemical Biology; Duke University, PhD

Mary Jo Ondrechen

Professor, Chemistry and Chemical Biology; Northwestern University, PhD

Annalisa Onnis-Hayden

Associate Teaching Professor, Civil and Environmental Engineering; University of Cagliari (Italy), PhD

Alina Oprea

Associate Professor, Computer and Information Science; Carnegie Mellon University, PhD

Toyoko J. Orimoto

Assistant Professor, Physics; University of California, Berkeley, PhD

Jessica Ormsby

Assistant Cooperative Education Coordinator, College of Engineering; University of Massachusetts, Boston, MEd

Andrew Orr-Skirvin

Associate Clinical Professor, Pharmacy and Health Systems Sciences; University of Texas, Austin, PharmD

Elika Ortega Guzman

Assistant Professor, Cultures, Societies, and Global Studies; University of Western Ontario (Canada), PhD

Sarah Ostadabbas

Assistant Professor, Electrical and Computer Engineering; University of Texas, Dallas, PhD

Timothy Ouillette

Assistant Teaching Professor, Communication Studies; Art Institute of Boston, MFA

Jane Owens

Associate Professor, Pharmacy and Health Systems Sciences; Pennsylvania State University, PhD

Oyindasola O. Oyelaran

Associate Teaching Professor, Chemistry and Chemical Biology; Harvard University, PhD

Yusuf Ozbek

Associate Teaching Professor, Graduate School of Engineering; Northeastern University, PhD

Sean O'Connell

Assistant Academic Specialist, College of Professional Studies; University of Massachusetts, MA

Catherine O'Connor

Clinical Instructor, Nursing; Boston College, MS

George A. O'Doherty

Professor, Chemistry and Chemical Biology; Ohio State University, PhD

Russ O'Haver

Senior Academic Specialist, Accounting; University of New York, PhD

Peggy L. O'Kelly

Principal Lecturer, Accounting; University of Michigan, MBA

Donald M. O'Malley

Associate Professor, Biology; Harvard University, PhD

Therese M. O'Neil-Pirozzi

Associate Professor, Communication Sciences and Disorders; Boston University, ScD

Taskin Padir

Associate Professor, Electrical and Computer Engineering; Purdue University, PhD

Robert K. Painter

Senior Lecturer, Linguistics; State University of New York, Buffalo, PhD

Himlona Palikhe

Assistant Teaching Professor, Graduate School of Engineering; Texas Tech University, PhD

Costas Panagopoulos

Professor, Political Science; New York University, PhD

Kwamina Panford

Associate Professor, Cultures, Societies, and Global Studies; Northeastern University, PhD

Coleen C. Pantalone

Associate Professor, Finance; Iowa State University, PhD

Themis Papageorge

Associate Clinical Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Harikrishnan Parameswaran

Assistant Professor, Bioengineering; Boston University, PhD

Serena Parekh McGushin

Associate Professor, Philosophy and Religion; Boston College, PhD

Jason Parente

Assistant Clinical Professor, Physician Assistant Program; Northeastern University, MS

Melissa Parenti

Assistant Teaching Professor, College of Professional Studies; University of Southern California, EdD

Andrea Parker

Assistant Professor, Computer and Information Science and Health Sciences; Georgia Institute of Technology, PhD

Christopher Parsons

Assistant Professor, History; University of Toronto (Canada), PhD

Nikos Passas

Professor, Criminology and Criminal Justice; University of Edinburgh (Scotland), PhD

Rupal Patel

Professor, Communication Sciences and Disorders and Computer and Information Science; University of Toronto (Canada), PhD

Dipu Patel-Junankar

Assistant Clinical Professor, Physician Assistant Program; University of Nebraska, MPAS

Bryan Patterson

Assistant Teaching Professor, College of Professional Studies; University of Florida, PhD

Mark R. Patterson

Professor, Marine and Environmental Sciences and Civil and Environmental Engineering; Harvard University, PhD

Koen Pauwels

Distinguished Professor, Marketing; University of California, Los Angeles, PhD

Michael Pavel

Professor of the Practice, Computer and Information Science and Health Sciences; New York University, PhD

Spiro Pavlopoulos

Research Associate Professor, Center for Drug Discovery; Victorian College of Pharmacy, Melbourne (Australia), PhD

Virgiliu Pavlu

Associate Teaching Professor, Computer and Information Science; Northeastern University, PhD

Nancy Pawlyshyn

Associate Teaching Professor, College of Professional Studies; Capella University, PhD

Celia Pearce

Associate Professor, Game Design; University of the Arts London (United Kingdom), PhD

Neal J. Pearlmutter

Associate Professor, Psychology; Massachusetts Institute of Technology, PhD

Melissa Pearson

Assistant Teaching Professor, Writing Program; University of South Carolina, PhD

Christoffer Pedersen

Assistant Professor, Art + Design; University of Copenhagen (Denmark), PhD

Melissa Peiken

Associate Cooperative Education Coordinator, College of Computer and Information Science; Emerson College, MEd

Russell Pensyl

Professor, Art + Design; Western Michigan University, MFA

Diane Perez

Assistant Academic Specialist, College of Professional Studies; Salem State University, MEd

Ivan Petkov

Assistant Professor, Economics; Boston College, PhD

Courtney Pfluger

Assistant Teaching Professor, Chemical Engineering; Northeastern University, PhD

Pegaret Pichler

Assistant Professor, Finance; Stanford University, PhD

Susan E. Picillo

Senior Lecturer, Communication Studies; Cambridge College, MEd

Pamela Pietrucci

Visiting Lecturer, Communication Studies; University of Washington, PhD

Jessica Pike

Assistant Cooperative Education Coordinator, College of Engineering; Bridgewater State University, MEd

Sara Pintado-Lopez

Associate Professor, Health Sciences; University Carlos III of Madrid (Spain), PhD

Ameet Pinto

Assistant Professor, Civil and Environmental Engineering; Virginia Polytechnic Institute and State University, PhD

Maricla Pirozzi

Assistant Cooperative Education Coordinator, Graduate School of Engineering; European School of Economics (Italy), MBA

Leigh Plant

Research Associate Professor, Pharmaceutical Sciences; University of Leeds (United Kingdom), PhD

Harlan D. Platt

Professor, Finance; University of Michigan, PhD

Marjorie Platt

Professor, Accounting; University of Michigan, PhD

Robert Platt Jr.

Assistant Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Mya Poe

Associate Professor, English; University of Massachusetts, Amherst, PhD

Hermine Poghosyan

Assistant Professor, Nursing; University of Massachusetts Boston, PhD

Ann Polcari

Associate Clinical Professor, Nursing; Boston College, PhD

Stephanie Pollack

Professor of the Practice, Public Policy and Urban Affairs; Harvard Law School, JD

Michael P. Pollastri

Professor, Chemistry and Chemical Biology; Brown University, PhD

Marius Popescu

Visiting Assistant Professor, Finance; Virginia Polytechnic Institute and State University, PhD

Hilary Poriss

Associate Professor, Music; University of Chicago, PhD

Gary Porter

Assistant Teaching Professor, Finance; University of South Carolina, PhD

Gerald Porter

Visiting Lecturer, Economics; Babson College, MBA

Richard D. Porter

Professor, Mathematics; Yale University, PhD

Veronica L. Porter

Associate Professor, Cooperative Education, College of Science; Northeastern University, MEd

John Portz

Professor, Political Science; University of Wisconsin, Madison, PhD

Mary-Susan Potts-Santone

Teaching Professor, Biology; University of New Hampshire, PhD

Karen Pounds

Assistant Clinical Professor, Nursing; University of Rhode Island, PhD

Michael J. Power

Lecturer, Supply Chain and Information Management; Northeastern University, MBA

Edward Powers

Assistant Teaching Professor, College of Professional Studies; Northeastern University, PhD

Susan G. Powers-Lee

Professor, Biology; University of California, Berkeley, PhD

Silvia Prina

Associate Professor, Economics; Boston University, PhD

Robert Prior

Associate Teaching Professor, College of Professional Studies; Nova Southeastern University, EdD

Robert Pritchard

Associate Teaching Professor, Economics; Northeastern University, PhD

Mark Prokosch

Senior Lecturer, Psychology; University of California, Davis, PhD

Sheila M. Puffer

Professor and University Distinguished Professor, International Business and Strategy; University of California, Berkeley, PhD

Karen Quigley

Research Associate Professor, Psychology; Ohio State University, PhD

Gordana Rabrenovic

Associate Professor, Sociology and Anthropology; State University of New York, Albany, PhD

John Rachlin

Assistant Teaching Professor, Computer and Information Science; Boston University, PhD

Joseph A. Raelin

Professor and Asa S. Knowles Chair of Practice-Oriented Education, Management and Organizational Development; State University of New York, Buffalo, PhD

Sriramasundarar Rajagopalan

Assistant Teaching Professor, College of Professional Studies; Capella University, PhD

Rajmohan Rajaraman

Professor, Computer and Information Science; University of Texas, Austin, PhD

Ravi Ramamurti

University Distinguished Chair Professor, International Business and Strategy; Harvard University, DBA

Valeria Ramdin

Assistant Clinical Professor, Nursing; Northeastern University, DNSc

Alireza Ramezani

Assistant Professor, Electrical and Computer Engineering; University of Michigan, PhD

Janet Randall

Professor, English; University of Massachusetts, Amherst, PhD

Aanjhan Ranganathan

Assistant Professor, Computer and Information Science; ETH Zurich (Switzerland), PhD

Carey M. Rappaport

College of Engineering Distinguished Professor, Electrical and Computer Engineering; Massachusetts Institute of Technology, ScD

Andrea Raynor

Teaching Professor, Art + Design; School of Visual Arts, MFA

Desislava Raytcheva

Lecturer, Biology; Northeastern University, PhD

Leena Razzaq

Assistant Teaching Professor, Computer and Information Science; Worcester Polytechnic Institute, PhD

Joseph Reagle

Associate Professor, Communication Studies; New York University, PhD

Debra J. Reid

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Imke Reimers

Assistant Professor, Economics; University of Minnesota, PhD

Karen Reiss Medwed

Associate Teaching Professor, College of Professional Studies; New York University, PhD

Marketa Rejtar

Assistant Clinical Professor, Nursing; Massachusetts General Hospital Institute of Health Professions, PhD

John R. Reynolds

Professor, Pharmacy and Health Systems Sciences; Duquesne University, PharmD

Karl Reynolds

Associate Teaching Professor, College of Professional Studies; University of Washington, PhD

Mahtab Rezvani

Assistant Academic Specialist, College of Professional Studies; California State University, Los Angeles, MA

Christopher Richardson

Lecturer, Biology; Boston University, PhD

Milda Richardson

Lecturer, Art + Design; Boston University, PhD

Megan Richmond

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MEd

Janet S. Rico

Associate Clinical Professor, Nursing; Northeastern University, PhD

Mirek Riedewald

Associate Professor, Computer and Information Science; University of California, Santa Barbara, PhD

Christoph Riedl

Assistant Professor, Supply Chain and Information Management and Computer and Information Science; Technische Universität München (Germany), PhD

Justin B. Ries

Associate Professor, Marine and Environmental Sciences; Johns Hopkins University, PhD

Matteo Rinaldi

Associate Professor, Electrical and Computer Engineering; University of Pennsylvania, PhD

Christie Rizzo

Assistant Professor, Applied Psychology; University of Southern California, Los Angeles, PhD

Christina Roberts

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Simmons College, MBA

Susan J. Roberts

Professor, Nursing; Boston University, DNSc

Christopher J. Robertson

Professor, International Business and Strategy; Florida State University, PhD

Craig M. Robertson

Associate Professor, Media and Screen Studies; University of Illinois, Urbana-Champaign, PhD

William Robertson

Associate Professor, Computer and Information Science and Electrical and Computer Engineering; University of California, Santa Barbara, PhD

Cordula Robinson

Associate Teaching Professor, College of Professional Studies; University College London (United Kingdom), PhD

Hillary Robinson

Associate Professor, Law and Sociology and Anthropology; Massachusetts Institute of Technology, PhD; Harvard University, JD

Holbrook Robinson

Associate Professor, Cultures, Societies, and Global Studies; University of California, Berkeley, PhD

Tracy L. Robinson Wood

Professor, Applied Psychology; Harvard University, EdD

Brian Robison

Assistant Teaching Professor, Music; Cornell University, DMA

David Rochefort

Distinguished Professor, Political Science; Brown University, PhD

Rachel Rodgers

Associate Professor, Applied Psychology; Université de Toulouse-Le Mirail (France), PhD

Kirsten Rodine Hardy

Associate Professor, Political Science; University of California, Berkeley, PhD

Bruce Ronkin

Professor, Music; University of Maryland, DMA

Tayla Rose

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of Connecticut, PharmD

Rebeca B. Rosengaus

Associate Professor, Marine and Environmental Sciences; Boston University, PhD

James R. Ross

Associate Professor, Journalism; American University, MA

Alexandra Roth

Associate Academic Specialist, International Business and Strategy; University of Frankfurt (Germany), PhD

Sara Rouhanifard

Assistant Professor, Bioengineering; Yeshiva University, PhD

Deya Roy

Postdoctoral Teaching Associate, Communication Studies; State University of New York, Amherst, MA

Jeffrey W. Ruberti

Professor, Bioengineering; Tulane University, PhD

Michael Ruff

Assistant Teaching Professor, Accounting; Bentley University, PhD

Timothy J. Rupert

Professor, Accounting; Pennsylvania State University, PhD

Ivan Rupnik

Associate Professor, Architecture; Harvard University, MArch

Bruce Russell

Associate Academic Specialist, Supply Chain and Information Management; National University of Ireland (Ireland), PhD

J. Timothy Sage

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Vinod Sahney

University Distinguished Professor, Mechanical and Industrial Engineering; University of Wisconsin, Madison, PhD

Yuki Sakurai

Visiting Lecturer, World Languages Center; Ohio State University, MA

Masoud Salehi

Associate Professor, Electrical and Computer Engineering; Stanford University, PhD

Carmel Salhi

Assistant Professor, Health Sciences; Harvard University, PhD

William Sanchez

Associate Professor, Applied Psychology; Boston University, PhD

Nada Sanders

Distinguished Professor of Supply Chain Management, Supply Chain and Information Management; Ohio State University, PhD

Tova Sanders

Associate Teaching Professor, College of Professional Studies; George Washington University, EdD

Ronald Sandler

Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Billye Sankofa Waters

Associate Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Ravi Sarathy

Professor, International Business and Strategy; University of Michigan, PhD

Linda Sarkisian

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Lynn University, MBA

Mehrdad Sasani

Associate Professor, Civil and Environmental Engineering; University of California, Berkeley, PhD

Ajay B. Satpute

Assistant Professor, Psychology; University of California, Los Angeles, PhD

Behrooz (Barry) Satvat

Associate Teaching Professor, Chemical Engineering; Massachusetts Institute of Technology, ScD

Daniel Saulnier

Associate Cooperative Education Coordinator, College of Engineering; Babson College, MBA

Kevin Scanlon

Professor of the Practice, Entrepreneurship and Innovation; University of London (United Kingdom), PhD

Samuel V. Scarpino

Assistant Professor, Marine and Environmental Sciences and Physics; University of Texas, Austin, PhD

Carmen Sceppa

Professor, Health Sciences; Francisco Marroquin University (Guatemala), MD; Tufts University, PhD

Martin Schedlbauer

Associate Clinical Professor, Computer and Information Science; University of Massachusetts, PhD

Gunar Schirner

Associate Professor, Electrical and Computer Engineering; University of California, Irvine, PhD

Ralf W. Schlosser

Professor, Communication Sciences and Disorders; Purdue University, PhD

Benjamin Schmidt

Assistant Professor, History; Princeton University, PhD

Walter Schnyder

Associate Teaching Professor, Computer and Information Science; Swiss Federal Institute of Technology (Switzerland), PhD

Egon Schulte

Professor, Mathematics; University of Dortmund (Germany), PhD

Kathryn Schulte Grahame

Associate Teaching Professor, Engineering; Columbia University, PhD

Joseph Schwartz

Associate Teaching Professor, Communication Studies; University of Iowa, PhD

Michael Schwartz

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Northeastern University, MS

Martin Schwarz Jr.

Associate Professor, Mathematics; Courant Institute, PhD

Cody Scott

Assistant Professor, Computer and Information Science; University of Maryland, PhD

Douglass Scott

Senior Lecturer, Art + Design; Yale University, MFA

Frank (Alex) Scott

Assistant Professor, Supply Chain and Information Management; Pennsylvania State University, PhD

Steven Scyphers

Assistant Professor, Marine and Environmental Sciences; University of South Alabama, PhD

Darcey Searles

Postdoctoral Teaching Associate, Communication Studies; Rutgers University, PhD

Max Sederer

Assistant Cooperative Education Coordinator, College of Engineering; Tufts University, MEd

Magy Seif El-Nasr

Associate Professor, Computer and Information Science and Art + Design; Northeastern University, PhD

Ethan Selinger

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Massachusetts, Lowell, MS

Laura Senier

Assistant Professor, Sociology and Anthropology and Health Sciences; Brown University, PhD

Sumi Seo

Lecturer, Mathematics; University of Missouri, Columbia, PhD

Susan Setta

Associate Professor, Philosophy and Religion; Pennsylvania State University, PhD

Bahram Shafai

Professor, Electrical and Computer Engineering; George Washington University, ScD

Michael Shah

Lecturer, Computer and Information Science; Tufts University, PhD

Rebecca M. Shansky

Assistant Professor, Psychology; Yale University, PhD

Harvey Shapiro

Associate Clinical Professor, College of Professional Studies; Hebrew Union College, PhD

William T. Sharp

Assistant Teaching Professor, Psychology; Boston Graduate School of Psychoanalysis, PhD

Gavin M. Shatkin

Associate Professor, Public Policy and Urban Affairs and Architecture; Rutgers University, PhD

Dennis R. Shaughnessy

Senior Academic Specialist, Entrepreneurship and Innovation; University of Maryland, JD

Margaret Shea

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston University, BLS

Thomas C. Sheahan

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, ScD

Sandra Shefelbine

Associate Professor, Mechanical and Industrial Engineering and Bioengineering; Stanford University, PhD

Abhi Shelat

Associate Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Paxton Sheldahl

Assistant Teaching Professor, Architecture; Harvard University, MArch

Eliot Sherman

Senior Lecturer, Finance; Bentley College, MST

H. David Sherman

Professor, Accounting; Harvard University, DBA

Amit Shesh

Associate Teaching Professor, Computer and Information Science; University of Minnesota, Twin Cities, PhD

Shiaoming Shi

Assistant Teaching Professor, Bioengineering; University of Pittsburgh, PhD

Craig Shillaber

Assistant Teaching Professor, Civil and Environmental Engineering; Virginia Polytechnic Institute and State University, MS

Jennifer Shire

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Columbia University, MBA

Olin Shivers

Professor, Computer and Information Science; Carnegie Mellon University, PhD

Mariya Shiyko

Associate Professor, Applied Psychology; City University of New York, PhD

Katy Shorey

Assistant Teaching Professor, Philosophy and Religion; University of Missouri, PhD

Aatmesh Shrivastava

Assistant Professor, Electrical and Computer Engineering; University of Virginia, Charlottesville, PhD

Stephanie Sibicky

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of Rhode Island, PhD

Brandon Sichling

Assistant Teaching Professor, Art + Design; Emerson College, MFA

Jose Sierra

Associate Teaching Professor, Computer and Information Science; Universidad Carlos III de Madrid (Spain), PhD

Robert Sikes

Associate Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of Texas, Houston, PhD

Michael B. Silevitch

Robert Black Professor of Engineering and College of Engineering Distinguished Professor, Electrical and Computer Engineering; Northeastern University, PhD

Peter Simon

Teaching Professor, Economics; Northern Illinois University, PhD

Simon Singer

Professor, Criminology and Criminal Justice; University of Pennsylvania, PhD

Hanumant Singh

Professor, Electrical and Computer Engineering and Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Rifat Sipahi

Associate Professor, Mechanical and Industrial Engineering; University of Connecticut, PhD

Michail V. Sitkovsky

Eleanor W. Black Chair in Immunophysiology and Pharmaceutical Biotechnology and Professor, Institute for Tissue Damage and Biology; Moscow State University (Russia), PhD

Mark Sivak

Associate Teaching Professor, Art + Design and Engineering; Northeastern University, PhD

Adrienne Slaughter

Lecturer, Computer and Information Science; University of Washington, PhD

Nikolai Slavov

Assistant Professor, Bioengineering; Princeton University, PhD

Rory Smead

Ronald L. and Linda A. Rossetti Professor for the Humanities, Philosophy and Religion; University of California, Irvine, PhD

David A. Smith

Assistant Professor, Computer and Information Science; Johns Hopkins University, PhD

Keith Smith

Assistant Professor, Marketing; University of Georgia, PhD

Matthew Smith

Associate Professor, Philosophy and Religion; University of North Carolina, Chapel Hill, PhD

Ronald Bruce Smith

Associate Professor, Music; University of California, Berkeley, PhD

Wendy A. Smith

College of Arts and Sciences Distinguished Associate Professor, Biology; Duke University, PhD

Eugene S. Smotkin

Professor, Chemistry and Chemical Biology; University of Texas, Austin, PhD

Bridget Smyser

Associate Teaching Professor, Mechanical and Industrial Engineering; Worcester Polytechnic Institute, PhD

Nancy P. Snyder

Associate Teaching Professor, Psychology; Harvard University, EdD

Dani Snyder-Young

Assistant Professor, Theatre; New State University, PhD

Pablo Soberon Bravo

Zelevinsky Research Professor, Mathematics; University College London (United Kingdom), PhD

Claudia Sokol

Associate Teaching Professor, World Languages Center; University of Buenos Aires (Argentina), MD

Eduardo Sontag

University Distinguished Professor, Electrical and Computer Engineering and Bioengineering; University of Florida, PhD

Maria Sorenson

Visiting Clinical Instructor, Nursing; Northeastern University, MSN

Susan Soroka

Assistant Teaching Professor, Writing Program; Drew University, PhD

Nikolaos S. Soukos

Assistant Teaching Professor, Physics and Biology; University of Munich (Germany), PhD

Bert A. Spector

Associate Professor, International Business and Strategy; University of Missouri, PhD

Denise Spencer

Senior Lecturer, Supply Chain and Information Management; Boston College, PhD

Karen M. Spikes

Lecturer, Psychology; Cornell University, PhD

David Sprague

Lecturer, Computer and Information Science; University of Victoria (Canada), PhD

Bryan Q. Spring

Assistant Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Shelia Springer

Postdoctoral Teaching Associate, Communication Studies; University of Arizona, Tucson, MA

Srinivas Sridhar

College of Arts and Sciences Distinguished Professor, Physics; California Institute of Technology, PhD

Kandarp Srinivasan

Assistant Professor, Finance; Washington University, St. Louis, PhD

Thomas Starr

Professor, Art + Design; Yale University, MFA

Mary Steffel

Assistant Professor, Marketing; Princeton University, PhD; University of Florida, PhD

Karen Stein

Visiting Assistant Professor, Art + Design; Virginia Commonwealth University, MFA

Leslie Stein

Assistant Teaching Professor, College of Professional Studies; United States International University, EdD

Armen B. Stepanyants

Associate Professor, Physics; University of Rhode Island, PhD

Jennie Stephens

Professor, Public Policy and Urban Affairs; California Institute of Technology, PhD

Dagmar Sternad

Professor, Biology and Electrical and Computer Engineering; University of Connecticut, PhD

Sara Stifano

Postdoctoral Teaching Associate, Communication Studies; University of Connecticut, PhD

Sebastian Stockman

Associate Teaching Professor, Writing Program; Emerson College, MFA

Milica Stojanovic

Professor, Electrical and Computer Engineering; Northeastern University, PhD

Janos Stone

Lecturer, Art + Design; Boston University, MFA

Michael Stone

Assistant Teaching Professor, Economics; University of Connecticut, PhD

Jacob Stowell

Associate Professor, Criminology and Criminal Justice; State University of New York, Albany, PhD

Tracy Strain

Professor of the Practice, Media and Screen Studies; Harvard University, MEd

Amy Stratman

Assistant Academic Specialist, College of Professional Studies; Simmons College, MA

Phyllis R. Strauss

Matthews Distinguished University Professor, Biology; Rockefeller University, PhD

Heather Streets-Salter

Professor, History; Duke University, PhD

Aron P. Stubbins

Associate Professor, Marine and Environmental Sciences and Civil and Environmental Engineering and Chemistry and Chemical Biology; Newcastle University (United Kingdom), PhD

Ming Su

Associate Professor, Chemical Engineering; Northwestern University, PhD

Fernando Suarez

Jean C. Tempel Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Alexandru I. Suci

Professor, Mathematics; Columbia University, PhD

Annemarie C. Sullivan

Clinical Instructor, Health Sciences; Northeastern University, MS

Denis Sullivan

Professor, Political Science and International Affairs; University of Michigan, PhD

Fareena Sultan

Professor, Marketing; Columbia University, PhD

Hao Sun

Assistant Professor, Civil and Environmental Engineering; Columbia University, PhD

Linlin Sun

Assistant Research Professor, Chemical Engineering; Northeastern University, PhD

Nian-Xiang Sun

Professor, Electrical and Computer Engineering; Stanford University, PhD

Ravi Sundaram

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Gloria Sutton

Associate Professor, Art + Design; University of California, Los Angeles, PhD

John D. Swain

Associate Professor, Physics; University of Toronto (Canada), PhD

Richard S. Swasey Jr.

Principal Lecturer, Finance; University of Virginia, MBA

Jacqueline F. Sweeney

Senior Cooperative Education Coordinator, College of Arts, Media and Design; Northeastern University, MS

Nina Sylvanus

Associate Professor, Sociology and Anthropology; Ecole des Hautes Etudes en Sciences Sociales, Paris (France), PhD

Balazs Szelenyi

Associate Teaching Professor, College of Professional Studies; University of California, Los Angeles, PhD

Mario Sznaier

Dennis Picard Trustee Professor, Electrical and Computer Engineering; University of Washington, PhD

Srinivas Tadigadapa

Professor, Electrical and Computer Engineering; Cambridge University (United Kingdom), PhD

Gilead Tadmor

Professor, Electrical and Computer Engineering; Weizmann Institute of Science (Israel), PhD

Paul Tagliamonte

Visiting Lecturer, Supply Chain and Information Management; Boston College, MS

David Tamés

Assistant Teaching Professor, Art + Design; Massachusetts College of Art and Design, MFA

Michael Tannebaum

Visiting Lecturer, Communication Studies; Georgia State University, PhD

Aysen Tanyeri-Abur

Associate Teaching Professor, Economics; Texas AM University, PhD

Peter Tarasewich

Assistant Teaching Professor, Supply Chain and Information Management; University of Connecticut, PhD

Mary Suzanne Tarmina

Associate Clinical Professor, Nursing; University of Utah, PhD

Mohammad E. Taslim

Professor, Mechanical and Industrial Engineering; University of Arizona, PhD

Tomasz R. Taylor

Professor, Physics; University of Warsaw (Poland), PhD

Philip Thai

Assistant Professor, History; Stanford University, PhD

Ganesh Thakur

Associate Professor, Pharmaceutical Sciences; Institute of Chemical Technology (India), PhD

Ronald S. Thomas

Senior Lecturer, International Business and Strategy; Harvard University, PhD

Corliss Thompson

Associate Teaching Professor, College of Professional Studies; University of North Carolina, Chapel Hill, PhD

Jamal Thorne

Assistant Teaching Professor, Art + Design; Northeastern University, MFA

George Thrush

Professor, Architecture; Harvard University, MArch

Jonathan L. Tilly

University Distinguished Professor, Biology; Rutgers, the State University of New Jersey, PhD

Frank Tip

Professor, Computer and Information Science; University of Amsterdam (Netherlands), PhD

Lisa J. Tison-Thomas

Assistant Cooperative Education Coordinator, College of Science; Emmanuel College, MA

Devesh Tiwari

Assistant Professor, Electrical and Computer Engineering; North Carolina State University, PhD

Yustianto Tjiptowidjojo

Assistant Teaching Professor, Mechanical and Industrial Engineering; Mississippi State University, PhD

Gordana G. Todorov

Professor, Mathematics; Brandeis University, PhD

Svetlana Todorova

Visiting Lecturer, Supply Chain and Information Management; Varna University of Management (Bulgaria), PhD

Alessio Tognetti

Assistant Academic Specialist, World Languages Center; University of Washington, MA

Valerio Toledano Laredo

Professor, Mathematics; University of Cambridge (United Kingdom), PhD

Michael Tolley

Associate Professor, Political Science; Johns Hopkins University, PhD

Peter Y. Topalov

Professor, Mathematics; Moscow State University (Russia), PhD

Vladimir P. Torchilin

University Distinguished Professor, Pharmaceutical Sciences; Moscow State University (Russia), PhD, DSc

Ali Touran

Professor, Civil and Environmental Engineering; Stanford University, PhD

Emery A. Trahan

Professor, Finance; State University of New York, Albany, PhD

Stavros Tripakis

Associate Professor, Computer and Information Science; Joseph Fourier University (France), PhD

Andrew Trotman

Assistant Professor, Accounting; Bond University (Australia), PhD

Geoffrey C. Trussell

Professor, Marine and Environmental Sciences; College of William and Mary, PhD

Kumiko Tsuji

Assistant Teaching Professor, World Languages Center; Georgetown University, PhD

Nathaniel Tuck

Lecturer, Computer and Information Science; University of Massachusetts, Lowell, PhD

Eugene Tunik

Associate Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Rutgers University, PhD

Berna Turam

Professor, International Affairs and Sociology and Anthropology; McGill University (Canada), PhD

Esther Tutella-Chen

Assistant Academic Specialist, College of Professional Studies; Vanderbilt University, MEd

Rafael Ubal Tena

Assistant Teaching Professor, Electrical and Computer Engineering; Universidad Politecnica de Valencia (Spain), PhD

Jonathan Ullman

Assistant Professor, Computer and Information Science; Harvard University, PhD

Annique Un

Associate Professor, International Business and Strategy; Massachusetts Institute of Technology, PhD

Christopher Unger

Associate Teaching Professor, College of Professional Studies; Harvard University, EdD

Steven R. Untersee

Lecturer, Biology; Tufts University, PhD

Moneesh Upmanyu

Professor, Mechanical and Industrial Engineering; University of Michigan, PhD

Ricardo Valdez

Assistant Teaching Professor, College of Professional Studies; University of Washington, PhD

Steven Vallas

Professor, Sociology and Anthropology; Rutgers University, PhD

Jenny A. Van Amburgh

Clinical Professor, Pharmacy and Health Systems Sciences; Albany College of Pharmacy, PharmD

Jan-Willem Van De Meent

Assistant Professor, Computer and Information Science; Leiden University (Netherlands), PhD

Anne L. Van De Ven-Moloney

Research Assistant Professor, Physics; Rice University, PhD

Maria Van Pelt

Associate Clinical Professor, Nursing; Villanova University, DNSc

Kathleen Vander Laan

Associate Cooperative Education Coordinator, College of Computer and Information Science; Salem State University, MBA

Ashkan Vaziri

Associate Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Elaine Vejar

Assistant Academic Specialist, College of Professional Studies; University of Massachusetts, Lowell, MS

Oana Veliche

Lecturer, Mathematics; Purdue University, PhD

Venkata Vemuri

Research Assistant Professor, Pharmaceutical Sciences; Osmania University (India), PhD

Vivek Venkatachalam

Assistant Professor, Physics; Harvard University, PhD

Madhavi Venkatesan

Visiting Assistant Teaching Professor, Economics; Vanderbilt University, PhD

Anand Venkateswaran

Associate Professor, Finance; Georgia State University, PhD

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Assistant Professor, Chemical Engineering; Massachusetts Institute of Technology, PhD

Lisa Worsh

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Lydia Young

Associate Teaching Professor, College of Professional Studies; Boston College, PhD

Nancy Young

Assistant Teaching Professor, College of Professional Studies; Boston University, PhD

Sara C. Young-Hong

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Nathanial Ziegler

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Katherine S. Ziemer

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Emily Zimmerman

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Gregory Zimmerman

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Kathrin Zippel

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Professor, Health Sciences; University of Pennsylvania, PhD

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Ronald Zullo

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Nikolai Zvonok

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Statements of Accreditation and State Authorization

Accreditation

Northeastern University has maintained its status as a member in good standing of the New England Association of Schools and Colleges (NEASC) Commission on Institutions of Higher Education (CIHE) since it was awarded its initial accreditation in 1940. The university was last reviewed by NEASC in 2008 and will be reviewed again in fall 2018.

Northeastern University possesses degree-granting authority in Massachusetts, under the auspices of the Massachusetts Board of Higher Education.

Program	Accrediting Agency
Northeastern University	New England Association of Schools and Colleges (NEASC)

BOUVÉ COLLEGE OF HEALTH SCIENCES

Program	Accrediting Agency
BS in Athletic Training	Commission on Accreditation of Athletic Training Education (CAATE)
BS in Health Science	Council on Education for Public Health
MS in Speech-Language Pathology and Audiology	Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), Massachusetts Board of Education ¹
BS in Nursing	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
MS in Physician Assistant Studies	Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA)
MS in Nursing	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
MS in Nursing in Anesthesia	Council on Accreditation of Nurse Anesthesia Educational Programs (COA); Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
Registered Nurse/BSN ³	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²

Post BS Doctor of Nursing Practice US Army Program in Anesthesia Nursing (USAGPAN)	Council on Accreditation of Nurse Anesthesia Educational Programs (COA)
DPT in Physical Therapy	Commission on Accreditation of Physical Therapy Education (CAPTE)
MS/MBA (two-year program)	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ² ; Commission on Collegiate Nursing Education (CCNE) and the Association to Advance Collegiate Schools of Business (AACSB International)
MS and CAGS in Applied Educational Psychology— School Psychology	Massachusetts Department of Education (DOE) and National Association of School Psychologists (NASP)
MS in Applied Educational Psychology – School Counseling	Massachusetts Department of Education (DOE)
AuD in Audiology	Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), Massachusetts Board of Education ¹
MPH Master of Public Health in Urban Health	Council on Education for Public Health
PharmD	Accreditation Council for Pharmacy Education (ACPE)
PhD in Counseling and School Psychology	American Psychology Association (APA)

¹ The Massachusetts Board of Education approves (not accredits) programs.

² The Massachusetts Board of Registration in Nursing approves (not accredits) programs.

³ Accredited under the aegis of the “sponsoring” full-time college.

College of Arts, Media and Design

Program	Accrediting Agency
Master of Architecture (Urban Architecture)	National Architectural Accreditation Board (NAAB)

D'Amore-McKim School of Business

Program	Accrediting Agency
BS in Business Administration	AACSB International—The Association to Advance Collegiate Schools of Business
BS and MS in International Business	AACSB International—The Association to Advance Collegiate Schools of Business
MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Finance	AACSB International—The Association to Advance Collegiate Schools of Business

MS in Taxation	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Accounting	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Accounting/MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Finance/MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Technological Entrepreneurship	AACSB International—The Association to Advance Collegiate Schools of Business

College of Computer and Information Science

Program	Accrediting Agency
BS in Computer Science	Computing Accreditation Commission of ABET (Accreditation Board for Engineering and Technology)

College of Engineering

Program	Accrediting Agency
BS in Computer Engineering	Engineering Accreditation Commission of ABET
BS in Chemical Engineering	Engineering Accreditation Commission of ABET
BS in Civil Engineering	Engineering Accreditation Commission of ABET
BS in Electrical Engineering	Engineering Accreditation Commission of ABET
BS in Industrial Engineering	Engineering Accreditation Commission of ABET
BS in Mechanical Engineering	Engineering Accreditation Commission of ABET

College of Professional Studies

Program	Accrediting Agency
AS and Certificate in Paramedic Technology	Massachusetts Department of Public Health, Office of Emergency Medical Services
BS in Finance and Accounting Management ¹	AACSB International—The Association to Advance Collegiate Schools of Business
BS in Management ¹	AACSB International—The Association to Advance Collegiate Schools of Business
BS and AS in Computer Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700
BS and AS in Electrical Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700

BS and AS in Mechanical Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700
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Education Programs in:

Teacher of Biology, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Chemistry, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Earth Science, 5–8, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Mathematics, 5–8, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Physics, 8–12	Massachusetts Department of Elementary and Secondary Education
Elementary Education, 1–6	Massachusetts Department of Elementary and Secondary Education
Teacher of English, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Foreign Language: Spanish, 5–12	Massachusetts Department of Elementary and Secondary Education
Teacher of History, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Political Science/Political Philosophy, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Students with Moderate Disabilities Pre-K–8, 5–12	Massachusetts Department of Elementary and Secondary Education
MS in Leadership with Project Management	Project Management Institute's Global-Accreditation-Center
MS in Technology Commercialization	AACSB International—The Association to Advance Collegiate Schools

¹ Accredited under the aegis of the “sponsoring” full-time college.

College of Social Science and Humanities

Program	Accrediting Agency
BS in Criminal Justice	Massachusetts Board of Education ¹
MS in Criminal Justice	Massachusetts Board of Education ¹
PhD in Criminal Justice	Massachusetts Board of Education ¹
Master of Public Administration	National Association of Schools of Public Affairs and Administration

¹ The Massachusetts Board of Education approves (not accredits) programs.

School of Law

Program	Accrediting Agency
JD	American Bar Association Association of American Law Schools ⁴

⁴ The Association of American Law Schools is an elected membership organization, not an accrediting body.

State Approvals, Authorizations, and Exemptions

Some states require that universities authorized to operate in their state make public disclosures. See the corresponding addendum on the Online and Graduate Professional Degree Programs website (<http://www.northeastern.edu/online/about-northeastern-online/state-agreements.php>) for up-to-date, state-prescribed regulatory information applicable to all degree levels.

Resources

Online Resources

The following online resources supplement this catalog:

Course descriptions:

<https://registrar.northeastern.edu/article/catalog-2017-2018/>

Class schedules:

<https://registrar.northeastern.edu/article/schedule-of-classes/>

Academic calendars:

www.northeastern.edu/registrar/calendars.html (<http://www.northeastern.edu/registrar/calendars.html>)

Campus maps:

www.northeastern.edu/campusmap (<http://www.northeastern.edu/campusmap>)

General Information

The *Northeastern University Undergraduate Catalog (Full-Time Day Programs)* contains the university's primary statements about these academic programs and degree requirements, as authorized by the president or the Board of Trustees. For information about other academic policies and procedures; student responsibilities; student academic and cocurricular life; faculty rights and responsibilities; or general personnel policies, benefits, and services, please refer to the *Undergraduate Student Handbook*, *Graduate Catalog*, *Cooperative Education Student Handbook*, *Faculty Handbook*, and related procedural guides, as appropriate.

Accreditation. Northeastern University is accredited by the New England Association of Schools and Colleges, Inc.

Delivery of Services. Northeastern University assumes no liability for delay or failure to provide educational or other services or facilities due to causes beyond its reasonable control. Causes include, without limitation, power failure, fire, strikes by university employees or others, damage by natural elements, and acts of public authorities. The university will, however, exert reasonable efforts, when it judges them to be appropriate, to provide comparable services, facilities, or performance; but its inability or failure to do so shall not subject the university to liability.

The *Northeastern University Undergraduate Catalog* contains current information about the university calendar, admissions, degree requirements, fees, and regulations; however, such information is not intended and should not be regarded to be contractual.

Northeastern University reserves the sole right to promulgate and change rules and regulations and to make changes of any nature in its program; calendar; admissions policies, procedures, and standards; degree requirements; fees; and academic schedule whenever necessary or desirable, including, without limitation, changes in course content and class schedule, the cancellation of scheduled classes and other academic activities, and the substitution of alternatives for scheduled classes and other academic activities. In any such case, the university will give whatever notice is reasonably practical.

Northeastern University will endeavor to make available to its students a fine education and a stimulating and congenial environment. However, the quality and rate of progress of an individual's academic career and professional advancement upon completion of a degree or program are largely dependent on his or her own abilities, commitment, and effort. In many professions and occupations, there are also requirements imposed by federal and state statutes and regulatory agencies for certification or entry into a particular field. These requirements may change while a student is enrolled in a program and may vary from state to state or country to country. Although the university stands ready to help its students find out about requirements and changes in them, it is the student's responsibility to initiate the inquiry.

Tuition Default Policy. In cases where the student defaults on his or her tuition, the student shall be liable for the outstanding tuition and all reasonable associated collection costs incurred by the university, including attorneys' fees.

Emergency Closing of the University. Northeastern University posts emergency announcements, including news of weather-related closings, on its homepage (<http://www.northeastern.edu>) and notifies members of the community individually through the NU ALERT system. In addition, the university has made arrangements to notify students, faculty, and staff by radio and television when it becomes necessary to cancel classes because of extremely inclement weather. AM stations WBZ (1030), WILD (1090), and WRKO (680), and FM station WBUR (90.9), are the radio stations authorized to announce the university's decision to close. Television stations WBZ-TV4, WCVB-TV5, and WHDH-TV7 will also report cancellations. Since instructional television courses originate from live or broadcast facilities at the university, neither the classes nor the courier service operates when the university is closed. Please listen to the radio or television to determine whether the university will be closed.

If a storm occurs at night, the announcement of university closing is given to the radio stations at approximately 6 a.m. Classes are generally canceled for that entire day and evening at all campus locations unless stated otherwise. When a storm begins late in the day, cancellations of evening classes may be announced. This announcement is usually made between 2 and 3 p.m.

Equal Opportunity Policy. Northeastern University does not discriminate on the basis of race, color, religion, sex, sexual orientation, age, national origin, disability, or veteran status in admission to, access to, treatment in, or employment in its programs and activities. In addition, Northeastern University will not condone any form of sexual harassment. Handbooks containing the university's nondiscrimination policies and its grievance procedures are available in the Office of Institutional Diversity and Inclusion, 125 Richards Hall. Inquiries regarding the university's nondiscrimination policies may be directed to:

Office of Institutional Diversity and Inclusion
125 Richards Hall
Northeastern University
Boston, Massachusetts 02115
617.373.2133

Inquiries concerning the application of nondiscrimination policies may also be referred to the:

Regional Director
Office for Civil Rights
U.S. Department of Education
8th Floor
5 Post Office Square
Boston, MA 02109-3921

Disability Resource Center. The Disability Resource Center provides a variety of disability-related services and accommodations to Northeastern University's students and employees with disabilities.

Northeastern University's compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 are coordinated by the senior director of the Disability Resource Center. Persons requiring information regarding the Disability Resource Center should contact the center at 617.373.2675 or, if using TTY, via Relay 711.

Family Educational Rights and Privacy Act. In accordance with the Family Educational Rights and Privacy Act of 1974, Northeastern University permits its students to inspect their records wherever appropriate and to challenge specific parts of them when they feel it is necessary to do so. Specific details of the law as it applies to Northeastern are printed in the *Undergraduate Student Handbook* and *Graduate Student Handbook* and are distributed annually at registration for the university's colleges and graduate schools.

Clery Act. Northeastern is committed to assisting all members of the university community in providing for their own safety and security. Information regarding campus security and personal safety, including topics such as crime prevention, university police law enforcement authority, crime reporting policies, crime statistics for the most recent three-year period, and disciplinary procedures, is available upon request from the Northeastern University Director of Public Safety, 360 Huntington Avenue, Boston, MA 02115, or by calling 617.373.2696.

Persistence Rates under the Student Right-to-Know Act. In the fall of 2017, the persistence rate for students who entered in the fall 2016 cohort was 96.7% percent.

Mission Statement:

To educate students for a life of fulfillment and accomplishment.
To create and translate knowledge to meet global and societal needs.

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Graduate

General Admission and Transfer Credit

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Regulations Applying to All Degree Programs

A copy of each graduate degree program as approved by the Board of Trustees and as officially amended is on file in the Office of the Provost. This record contains the goals of all requirements for the program. All descriptions of the program in the university, college, and department publications must conform to this officially approved record. Descriptions of PlusOne programs are also on file in the provost's office.

Standards of admission are specific to certificate and degree programs.

Admission Requirements

Prior to beginning a graduate program, students must meet one of the following conditions:

- Have received a bachelor's degree or equivalent from an accredited college or university
- Have received a master's degree or equivalent degree from an accredited college or university
- Have received a first professional or equivalent degree from an accredited college or university
- Have been accepted into an approved bachelor's-to-graduate-degree program

Registration

Northeastern University has a policy of continuous registration while enrolled full-time in a graduate degree program.

All students must register for course work, research, thesis, dissertation, or continuation courses for each semester in order to be in good standing in the program. Registration is continuous with the exception of summer. A student must be registered in summer only if he or she will be graduating in the summer or holds an award that requires registration. Students must be registered during the semester in which they complete all requirements for their degree.

When circumstances warrant, e.g., medical exigency, a student may seek a leave of absence.

The university parental leave policy is available in the University Policies section of the Office of the Provost (<https://provost.northeastern.edu/policies>) website.

Transfer Credit

A maximum of 9 semester hours of credit (or 12 quarter hours) obtained at another institution may be accepted toward the degree, provided the credits consist of work taken at the graduate level for graduate credit, carry grades of 3.000 or better, have been earned at an accredited institution, and have not been used toward any baccalaureate or advanced degree or certificate at another institution.

Transfer credits must be no more than five academic years old at the time the student is admitted to graduate study. Courses older than five years will be accepted only in rare circumstances.

Grades earned in transferred credits are not counted as part of the overall grade-point average earned at Northeastern.

Transfer credits will only be accepted at the discretion of the academic department and the college's graduate office.

Note: The College of Professional Studies' (CPS) transfer policy (p. 301) is available in the CPS section of the catalog.

Special Student Status

Those students who are not pursuing a specific degree program are classified as special students. Special students must satisfy the requirements for admission and perform at a satisfactory level in course work in order to continue as special students. Performance of a special student in graduate courses should average at least 3.000 in order for the student to be allowed to register for any subsequent classes. The number of credits that may be earned by a student enrolled as a special student is at the discretion of each graduate office. However, only a maximum of 12 graduate semester hours may be applied to a graduate program. Students interested in pursuing a degree program must make a formal application to the degree program. Special students who do not register for four consecutive semesters, excluding summer semester, will be subject to review and possible withdrawal.

Special students are not eligible for Northeastern financial aid awards or federal financial aid.

Provisional Student Status

Provisional students are students whose academic records do not qualify them for acceptance as regular students. Provisional students must obtain a 3.000 grade-point average in the first 9 semester hours of graduate courses in order to continue in the graduate program or meet specifically delineated departmental requirements to qualify for full acceptance to a degree program. Students may not earn more than 9 semester hours while enrolled in provisional status. After the completion of 9 semester hours, students must either satisfy regular admission standards or be denied further registration in the graduate program.

Provisional students are not eligible for Northeastern financial aid awards or federal financial aid.

International students cannot be admitted provisionally or conditionally.

Undergraduate Credit for Graduate Courses

Undergraduate students who are juniors or seniors may enroll in graduate courses for credit toward their undergraduate degrees if they meet all prerequisites as determined by the graduate director and they receive

permission from the instructor of the course and from the student's undergraduate academic advisor.

Inter- and Intracollege Graduate Courses

In colleges that have a graduate school, units within the college that do not offer graduate degree programs may offer a maximum of two courses per year if the courses are approved within a unit or units offering a graduate degree program. These courses will be subject to the same review process as other graduate courses.

University-Mandated Training

All students must fulfill all university-mandated ethics and safety training.

Regulations Applying only to Doctor of Philosophy (PhD) Programs

Committee in Charge of the Graduate Student's Degree Program

The committee in charge of the graduate student's degree program is that body charged with overseeing all academic and administrative matters relating to the program. This committee will be a departmental or, in the case of colleges without departments, a college committee.

PhD Dissertation Committees

No dissertation committee shall have fewer than three faculty members, two of whom shall be from Northeastern University. The chair of the dissertation committee will be a full-time tenured or tenure-track member of the faculty of Northeastern University and will hold an appropriate doctorate. A research faculty member may chair a dissertation committee if he or she holds an appropriate doctorate and has received the approval to do so from the tenured and tenure-track faculty members of the unit(s) in which his or her appointment resides.

If a student's major advisor leaves Northeastern, that person may continue the research direction of the dissertation or thesis. However, a co-advisor must be appointed from the academic department or program. The student will then have two advisors, one an official member of the Northeastern faculty who will be available for research and administrative matters and the ex-Northeastern advisor. If a new major advisor is appointed, the ex-Northeastern faculty member may serve as an outside member of the committee.

The PhD committee should be appointed early enough to advise in the formulation of the student's program and in refining the research topic for the dissertation. Within the constraints of the above criteria, the PhD program faculty will determine the process by which dissertation committees are established. The final list of dissertation committee members shall be reported to the associate dean for graduate education.

Each PhD student shall have an annual review of his or her progress toward the degree. A copy of the review shall be submitted to the student.

After reaching candidacy, students must register for Dissertation for a minimum of two semesters in order to fulfill their formal residency requirement. Continuation status enrollment is for students who are postcandidacy, have completed all course work, and are actively engaged in completing a thesis or dissertation.

General Regulations and Requirements for Nondegree Certificate Programs

Certificates That Appear on the Transcript

DEFINITION

A nondegree certificate program is a program of study requiring at least four graduate courses, or 12 semester hours of graduate credit, but no more than 30 semester hours of graduate credit. In the College of Professional Studies (CPS), the number of credits for a certificate varies from 16 quarter hours to 30 quarter hours. Successful completion of such a certificate program will be recorded on the student's transcript. Appropriate graduate credits taken as part of a nondegree certificate program may be counted toward a regular graduate degree at the discretion of the committee in charge of the graduate program.

ADMISSION

All students admitted to a certificate program must satisfy the general requirements for admission as a graduate student and the requirements for the specific certificate program.

PROCEDURES FOR THE APPROVAL OF NEW CERTIFICATE PROGRAMS

New certificate programs are developed following the procedure outlined in the Guidelines for New Degree Programs found on the Office of the Provost (<http://www.northeastern.edu/provost/policies>) website.

PROCEDURES FOR CERTIFICATE PROGRAM REVIEW

Certificate programs will be reviewed in the context of departmental reviews. Information about these reviews can be found on the Office of the Provost (<http://www.northeastern.edu/provost/policies>) website.

GENERAL REGULATIONS

Except as indicated herein, certificate programs shall be subject to the same regulations and procedures as master's degree programs.

Course Programs That Do Not Appear on the Transcript

Colleges offering graduate programs may choose to recognize the completion of sequences of courses requiring fewer courses than a certificate program. No such recognition shall be placed on the student's transcript. Such a nontranscript program shall not involve more than four graduate courses or 12 semester hours of graduate credit. The requirements of any such nontranscript program will be forwarded to the vice provost for graduate education for record-keeping purposes.

General Regulations and Requirements for the Master's Degree

Admission

All students admitted to a master's program must satisfy the general requirements for admission as a graduate student and the requirements for the specific master's program.

Academic Classifications

Those students who have a bachelor's degree from an accredited college or university and satisfy the admissions requirements of the appropriate graduate school are classified as regular students. Domestic students whose records are not of acceptable quality may be accepted as provisional students. International students cannot be accepted provisionally. Provisional students must obtain a 3.000 grade-point average in the first 9 semester hours or otherwise fulfill the delineated departmental requirements to continue in the graduate program; they then become regular students. Any student whose record is not satisfactory may be dropped by action of the committee in charge of the degree program.

Course Requirements

A candidate for the master's degree must satisfactorily complete an approved program conforming to the requirements of the graduate school and department or program in which the candidate is registered.

The requirements for the master's degree are a minimum of 30 semester hours of graduate work beyond the bachelor's degree, except in the College of Professional Studies, in which 45 quarter hours of graduate work are required. There may also be other study required by the graduate school and department or program concerned. Students enrolled in a PlusOne program will be allowed to double-count prescribed graduate courses as part of their undergraduate degree.

Language Requirement

The committee in charge of the degree program may establish a language requirement.

Comprehensive Examination

At the discretion of the committee in charge of the degree program, final written or oral comprehensive examination(s) may be required. Such examinations will be given at least two weeks before the Commencement at which the degree is to be awarded.

Thesis

If a thesis is required in partial fulfillment of degree requirements, it must show independent work based, in part, on original material and must meet the approval of the student's thesis committee. The committee in charge of the degree program is responsible for providing instructions concerning preparation of the thesis.

The student must submit the thesis to ProQuest in sufficient time to allow for acceptance before the Commencement clearance deadline. Information on archiving a thesis with ProQuest is available in the program-relevant graduate office.

Time Limitation

Course credits earned in the program of graduate study, or accepted by transfer, are valid for a maximum of seven years unless the relevant graduate office grants an extension.

General Regulations and Requirements for the Certificate of Advanced Graduate Study

The Certificate of Advanced Graduate Study (CAGS) provides specialized study above the master's degree. It is a course of study that falls between the master's and doctoral degree and culminates in a graduate certificate.

Admission

An applicant for the CAGS must hold a master's degree in a related field from an accredited institution and must complete the admission procedure described in the material of the graduate school. All students admitted to a CAGS program must satisfy the general requirements for admission as a graduate student and the requirements for the specific CAGS program.

Academic Classifications and Degree Candidacy

Students admitted to a CAGS program will be designated as candidates for the Certificate of Advanced Graduate Study.

Course Requirements

A candidate for the CAGS must satisfactorily complete an approved program conforming to the requirements of the graduate school and department or program in which the candidate is registered. The

candidate must complete a minimum of 24 semester hours or, in the case of the College of Professional Studies, 32 quarter hours of credit beyond the master's degree.

Time Limitation

Course credits earned in the program of graduate study, or accepted by transfer, are valid for a maximum of seven years unless the relevant graduate office grants an extension.

General Regulations and Requirements for the Research Doctorate (PhD and EdD)

The formal requirements for the PhD degree are the following:

- Completion of the course work mandated by the individual degree program.
- Fulfillment of the residency requirement.
- Formal training in the Responsible Conduct of Research (<http://ori.hhs.gov/sites/default/files/rcrintro.pdf>) for students as appropriate.
- A comprehensive examination or equivalent if required by the degree program.
- Continuous registration.
- A final examination conducted by the student's PhD committee.
- Submission of a dissertation to the relevant graduate office and to ProQuest for archiving. The dissertation must be based on original and independent research.

Admission

All students admitted to a doctor of philosophy program must satisfy the general requirements for admission as a graduate student and the requirements for the specific PhD program.

Academic Classification and Degree Candidacy

DOCTORAL STUDENT

Students in this classification have been admitted to a doctoral program.

DOCTORAL CANDIDATE

Every degree program shall have a policy defining candidacy. Students in this classification will have completed all departmental, college, and university requirements except for the dissertation. These requirements vary by program but minimally include completion of approximately 30 semester hours of acceptable graduate work beyond the bachelor's degree or possession of a previously earned master's degree that is acceptable to the department and certified by the graduate office. The requirements frequently include a comprehensive examination or a proposal defense.

Residence

Every degree program shall have a policy defining residency for candidates for doctoral degrees. The committee in charge of the degree program defines residency and specifies the method by which any residence requirement is satisfied.

Course Requirements

The program committee in charge of the degree program specifies the doctoral course requirements.

Language Requirements

The committee in charge of the degree program establishes the nature of the language requirement, if any.

Responsible Conduct of Research

By the end of their third year, all doctoral students for whom the Responsible Conduct of Research training is required must have completed this training. Training sessions are highly recommended for all doctoral students. The Office of the Vice Provost for Research is responsible for ensuring that appropriate training is available for doctoral students.

Qualifying Examination(s)

In departments that require qualifying examinations, students must be notified in writing of the nature and regulations governing these examinations and of how their performance on the examinations will affect their normal progress toward the degree. The graduate office should be made aware of the department regulations concerning such examinations.

Comprehensive Examination(s)

Degree programs may require a comprehensive examination as the final step before becoming a PhD candidate. The purpose of this examination(s) is to test the knowledge and skills of the student in a particular area and his or her knowledge of recent research developments in the field. The PhD program faculty will determine the process by which comprehensive examination committees are established.

Dissertation

Candidates for the degree of Doctor of Philosophy must complete a dissertation that embodies the results of extended research and makes an original contribution to the field. This work should give evidence of the candidate's ability to carry out independent investigation and to interpret in a logical manner the results of the research. The committee in charge of the degree program establishes the method of approval of the dissertation.

Candidates for the degree of Doctor of Education must complete a dissertation that embodies the results of extended, creative, and independent research and proper evaluation and interpretation of the results. The committee in charge of the degree program establishes the method of approval of the dissertation.

Final Oral Examination and Submission of Dissertation

The final oral examination will be carried out after the completion of all other requirements of the degree. The final oral examination will be on the subject matter of the doctoral dissertation and significant developments in the field of the dissertation. Other fields may be included if recommended by the examining committee.

Students must have completed all degree conferral requirements (including having successfully defended their thesis and having submitted their approved thesis as required by the department and to ProQuest) by the last day of the final exam period in order to be graduated in that semester. Graduate students must be continuously enrolled through the end of the term in which they have successfully completed all degree conferral requirements.

Time Limitation

After the establishment of degree candidacy, a maximum of five years will be allowed for the completion of the degree requirements. Under extenuating circumstances, a student may request an extension of this time frame.

General Regulations and Requirements for Interdisciplinary Graduate Degrees

Northeastern University offers individually designed and ongoing interdisciplinary graduate programs. The individually designed program is for the student who wishes to pursue graduate studies in an area that substantially overlaps two or more units. In such cases, that student may design, in consultation with his or her faculty advisor(s), an interdisciplinary program. The program will correspond in scope and depth to Northeastern's established degree standards but need not agree exactly with the regulations of individual units. There are also ongoing programs for students who wish to pursue graduate studies in areas in which two or more units have jointly established a graduate program. As with individually designed programs, ongoing programs correspond in scope and depth to Northeastern's established degree standards but do not agree exactly with the regulations of individual units.

The general regulations and requirements for graduate programs apply to interdisciplinary programs. Additional regulations and requirements are stated below.

Admission

UNIVERSITY-APPROVED INTERDISCIPLINARY PROGRAMS

Ongoing interdisciplinary programs are university-approved programs in areas of study that combine study in two or more units.

Each interdisciplinary graduate program shall be managed as established in the approved design of the program. All interdisciplinary programs, both master's and PhD, shall identify a committee with representation from all of the units involved to oversee the administration of the program in accordance with the guidelines established above. All administrative details, including but not limited to admission, probation notification, and graduation clearance, shall be carried out by the registration unit. Curriculum design and any subsequent modifications to a program shall be approved by the established procedures within all of the units involved.

INDIVIDUALLY DESIGNED INTERDISCIPLINARY PROGRAMS

In order to pursue an individually designed interdisciplinary graduate program, a student must have been accepted into an approved graduate program that will serve as the registration unit for the interdisciplinary program.

Successful application for admission to an individually designed interdisciplinary program consists of a carefully thought-out, written proposal describing the areas of proposed study and research. Part of this proposal will be a list of courses to be taken; a description of the qualifying and comprehensive examination process to be used, if any; a timeline; and any other requirements of the program. This proposal must be designed and prepared in consultation with a terminally prepared faculty member at Northeastern University. In the case of an interdisciplinary PhD proposal, this faculty member must meet the qualifications defined in the section on PhD Dissertation Committees (p. 11). At least two units must be participating in order for the proposal to be deemed interdisciplinary. The proposal must correspond in scope and depth to Northeastern's established degree standards. All of the units and the associate dean(s) for graduate education of the participating college(s) must approve the proposal. Approval of the proposal indicates that appropriate curricular and other academic norms for the specified degree are satisfied. A proposal for a PhD must define an area of study in which original and independent research can take place.

Admission of the student to the interdisciplinary program of study requires favorable recommendation by all units involved, including the

registration unit. It also requires the commitment by a faculty member at Northeastern University to be the advisor of the student and chair of the interdisciplinary committee for the student. In the case of an interdisciplinary PhD program, this faculty member must meet the qualifications defined in the section on PhD Dissertation Committees (p. 11). This faculty member may or may not be a member of the registration unit. The committee must be assembled within the first semester of the program and must include faculty members from all of the participating units. At least two units must be represented on the committee.

This committee will be responsible for overseeing the completion of the degree requirements. It will also be responsible for the administrative elements of the program, such as the monitoring of satisfactory progress; the design and grading of the preliminary and comprehensive exams, if applicable; graduation clearance; etc. This interdisciplinary committee is also responsible for an annual review of the progress of the student and for reporting this progress to the registration unit on an annual basis.

Information for Entering Students

Graduate education at Northeastern integrates the highest level of scholarship across disciplinary boundaries with significant research and experiential learning opportunities in Boston and around the world. Northeastern offers more than 165 graduate programs, ranging from doctoral and full-time master's programs to part-time programs and graduate certificates, including an array of innovative PhD and master's programs designed to prepare students for emerging new fields. Students are able to take courses on campus, online, or in hybrid formats. This multidimensional learning environment offers students the knowledge and experience to excel and the flexibility to create the educational experience that best meets their needs. Our graduates are well positioned to meet the diverse demands of careers in academia, industry, and the professions.

- Living in Boston (p. 15)
- Information for International Students (p. 15)
- Academic Resources (p. 16)
- Information Technology Services (p. 17)
- Campus Resources (p. 18)

Living in Boston

Boston is an exciting city that is the perfect place for students. For links to Boston landmarks, cultural institutions, news sources, city guides, and off-campus apartment listings, visit the links below.

Off Campus Student Services

226 Curry Student Center
617.373.8480
offcampus@northeastern.edu

Off Campus Student Services provides a wide range of information, resources, and educational workshops for students who are interested in living off campus or who already live off campus.

Off Campus Student Services provides assistance in searching for off-campus housing, finding roommates, and learning more about the communities surrounding Northeastern University. Our website offers a host of resources including an apartment search database, information on transportation, and City of Boston tenant services, as well as contact information for area real estate professionals.

Off Campus Student Services publishes a monthly e-newsletter that provides valuable tips and information on upcoming programs and events both on campus and off campus. Individuals interested in receiving our newsletter can email us at offcampus@northeastern.edu or stop into the office Monday through Friday.

For more information, visit the Off Campus Student Services website (<http://www.northeastern.edu/offcampus>).

Information for International Students

Office of Global Services

Website (<http://www.northeastern.edu/ogs>)
405 Ell Hall
617.373.2310

617.373.8788 (fax)

The Office of Global Services (OGS) offers a vast array of programs and services to more than 13,000 international students and scholars who represent approximately 147 nations.

The OGS also works to promote meaningful interaction and intercultural understanding among citizens of other countries and their peers from the United States, providing educational and cultural enrichment opportunities for all members of Northeastern and the community at large.

The OGS oversees the Student and Exchange Visitor Information System (SEVIS) at Northeastern, as mandated by the U.S. federal government, in order to ensure compliance with regulations and procedures affecting those international students and scholars in specified nonimmigrant visa classifications.

Affiliation with the OGS begins with admission to the academic program and continues through such initiatives as the OGS's cultural festival in February, "OGS Carnevale," which celebrates the cultural diversity of the entire university community. For a list of OGS services and programs, visit the OGS website (<http://catalog.northeastern.edu/graduate/information-entering-students/international-students/northeastern.edu/ogs>).

International students must maintain full-time status at Northeastern to be in compliance with immigration and SEVIS regulations. Also, they must not engage in any type of employment unless authorized by the OGS. Note that timely registration for courses is especially important so that they may remain in compliance with current federal regulations. They should consult with the OGS if they have questions about their individual status.

Coming to Boston

Preparing to travel to Boston and begin your studies at Northeastern University is exciting, and you have many things to do in preparation for both. When you plan carefully, your travels and arrival in Boston should go smoothly. Here are some of the key things you should do to prepare.

- **Obtain your F-1 or J-1 visa** from the U.S. embassy or consulate in your home country to be eligible to study in the United States. An international student may attend Northeastern in a nonimmigrant status other than F-1 or J-1 only if U.S. immigration regulations allow for study in the United States under that specific nonimmigrant visa classification. Some international students must apply and be approved for a change of status (e.g., from B-2 to F-1) before beginning the program at Northeastern. For detailed information/instructions specific to your current nonimmigrant status, as well as eligibility to participate in co-op or other forms of experiential learning required by your academic program, contact the OGS (<http://www.northeastern.edu/ogs/visaprocess.html>).
- **Mandatory Student Health Insurance:** Since September 1989, Massachusetts law (M.G.L. c.15A, § 18) has required every full-time and part-time student enrolled in a certificate, diploma, or degree-granting program in a Massachusetts institution of higher learning to participate in a Student Health Insurance Program (SHIP) or in a health benefit plan with comparable coverage. The Student Health Program defines a part-time student as a student enrolled in at least 75 percent of the full-time curriculum. (College of Professional

Studies graduate students—7 credits, part-time graduate students—6 credits).

- **Health report:** Prior to entering Northeastern, all enrolled students must complete and submit a health report to University Health and Counseling Services (UHCS). It must be completed and returned by the stated deadline. The required record of immunity section is necessary for compliance with the Massachusetts immunization requirements for college-age students. Failure to meet the requirement will prevent future course registration. Additionally, further documentation of immunity is mandatory for students in Bouvé College of Health Sciences. Visit the UHCS webpage (<http://www.northeastern.edu/uhrs>) to access the health report online.

Planning Information

As a new international student you are expected to arrive by the start date of your program stated on the I-20 issued by Northeastern or on the DS-2019 issued by Northeastern or by your sponsoring agency/government.

When you make your travel arrangements, you should seek admission to the United States no more than 30 days prior to the report date on your I-20 or DS-2019, and you should not arrive after the report date on your I-20 or DS-2019.

All international students will need to attend the scheduled international student orientation program and complete the international student online check-in process. For further details on the OGS international student orientation and online check-in process, and for other information pertinent to international students, check the OGS website (<http://www.northeastern.edu/ogs>).

International Student Orientation

At the beginning of each semester the OGS organizes sessions, events, and activities designed to ensure you have completed all U.S. documentation requirements and to provide you with information and support to ease your transition to life in the United States and at Northeastern University. During these sessions, you will also have the opportunity to meet other international students, learn from shared experiences, and find any assistance you may need.

Orientation week is very important. Make sure you are following all the instructions provided by your academic department and the OGS about the program, and attend as many scheduled events as you can to ensure a smooth transition during your first few weeks on campus.

For a schedule of required sessions and other events, see the OGS website (<http://www.northeastern.edu/ogs/schedule.html>).

If you are a U.S. citizen living abroad, you are not required to complete OGS's activities and sessions. You are more than welcome, however, to attend other sessions and events planned by the OGS during orientation. Visit the orientation schedule on the OGS website (<https://www.northeastern.edu/ogs/home/new-students/orientation>) to see a full listing of other sessions and events.

Participate in Cultural Events

We are proud to offer cultural events throughout the academic year to the Northeastern community. For more information and to register, check the schedule of events on the OGS website. (<https://www.northeastern.edu/ogs/home/new-students/orientation>)

SEVIS Compliance

The OGS is required to comply with immigration regulations governing your student status and must submit information every semester as required by the Department of Homeland Security.

The OGS: Your Resource for SEVIS Advice and Assistance

The OGS advises students on the complexities of immigration compliance and interfaces with various U.S. government agencies. The OGS maintains and updates the SEVIS system and advises students on relevant issues related to nonimmigrant student status by individual appointments or through workshops and information sessions. Consult the OGS whenever you have a question relating to your nonimmigrant student status or any aspect of SEVIS compliance.

Academic Resources

- Libraries (p. 16)
- Office of the Registrar (p. 17)

Libraries

Website (<http://www.library.northeastern.edu>)

Northeastern University Libraries
617.373.8778

Snell Library is the university's primary research library, with collections and services supporting research and teaching across disciplines. Holdings are extensive, with a large proportion available digitally. Collections include more than 800,000 print volumes, more than 500,000 e-books, 70,000 serial subscriptions, 74,000 licensed e-journals, and more than 6,300 feet of archival and manuscript collections. Additionally, Northeastern University Libraries is a selective federal depository, maintaining a collection of materials (mostly online) published and distributed by the federal government.

Snell Library is also the primary study environment on campus, open 24/7 to the whole university community, year-round. Spaces include group, quiet, and silent work areas, with more than 30 group study rooms with whiteboards and plug-in displays for collaborative group work. Individual study rooms are also available for graduate students. In partnership with Information Technology Services, the library supports the Digital Media Commons and InfoCommons computing areas, providing high-level media creation and editing capabilities. The Digital Media Commons also includes a 3D printing studio with a full suite of fabrication technologies and professional-level audio and video recording studios.

Services provided by Snell Library include both on-site and distance reference, the latter including 24/7 live chat with a reference librarian; subject-specialist librarians who provide in-depth consultation and research support for each academic program at the university; and an interlibrary loan system for providing materials not readily available at Northeastern. Digital scholarship project support and tools are also available through an institutional repository and data management services. The library also teaches workshops on digital media tools and resources and instructional sessions about library research for students and faculty.

A free, university-operated shuttle service provides students with a safe ride home (within a mile radius of campus) from Snell Library every 20 minutes from 7:00 p.m. to 6:00 a.m.

The School of Law Library, located on five floors in the Knowles Law Center, includes a comprehensive collection of U.S. legal materials in print and in electronic format. Of particular note is the library's collection in the areas of public interest law; international human rights law; and public health, death penalty issues, and progressive lawyering. Access to print and electronic materials is provided through Scholar OneSearch, the university's online library catalog. More information can be found at the School of Law Library webpage (<http://www.northeastern.edu/law/library>).

Office of the Registrar

Walk-in address

271 Huntington Avenue

Mailing address

Northeastern University
ATTN: Office of the Registrar, 230-271
360 Huntington Avenue
Boston, MA 02115-5000

617.373.2300

617.373.5351 (fax)

registrar@northeastern.edu

Website (<http://www.northeastern.edu/registrar>)

The Office of the University Registrar provides an important link between the university's academic programs and policies and the student. It administers a number of specific services, including class scheduling, registration, record functions, verification of enrollment, reporting, transcript services, and Commencement.

The registrar's office utilizes the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>) to provide students convenient access to information and services, including class schedules and registration, most recent grades, unofficial transcripts, and transcript and enrollment verification requests. Additional information is available at the registrar's office website (<http://www.northeastern.edu/registrar>).

Information Technology Services

Website (<https://its.northeastern.edu>)

617.373.4357 (xHELP)

help@northeastern.edu

Information Technology Services (ITS) is the centralized technology resource for students, faculty, and staff. ITS provides secure, high-speed internet access through the on-campus networks NUNet and ResNet; wireless internet connectivity through NUwave; centralized computer labs—the InfoCommons and the Digital Media Commons (DMC)—with the latest software; on-site and remote printing; access to the Blackboard learning management system; a vast array of software applications for Windows and Mac; access to myNortheastern, Northeastern's online portal; on-site and online training on popular software; and high-performance research computing.

ITS Service Desk

Help and Information Desk, Snell Library, First Floor

617.373.4357 xHELP

help@northeastern.edu

chat at <https://northeastern.service-now.com/sp>

The ITS Service Desk provides phone-based and walk-up technology support services to students, faculty, and staff. The ITS Service Desk

staff also offers support for ITS-managed printers and answers general computing questions. Contact the ITS Service Desk for the following services:

- Assisting students with Northeastern University–provided accounts and applications, including email, myNortheastern, and Blackboard
- Investigating wired and wireless network connection problems
- Troubleshooting network printer problems
- Support with ITS-managed labs
- Access to equipment available for loan, including AV equipment, laptops, and laptop adapters

The ITS Service Desk is located at the Help and Information Desk on the first floor of Snell Library near the InfoCommons and provides assistance on computer-related issues to students, faculty, and staff with a valid Northeastern ID.

myNortheastern

Website (<https://my.northeastern.edu>)

help@northeastern.edu

myNortheastern—the online portal for the Northeastern community—is a central resource for students, faculty, and staff. Your myNortheastern username and password provide access to key university platforms, from the myNortheastern portal to other university systems, including wireless network access, printing, and email.

The myNortheastern portal offers services tailored to your role at Northeastern for all academic, personal, and recreational needs. Resources available for students include links to student email, information channels, financial aid, Blackboard, and online course registration. NU Alert, our real-time university emergency notification system, utilizes the contact information provided within myNortheastern. It is your responsibility to maintain accurate personal and emergency contact information.

ResNet and the ResNet Resource Center

Website (<http://www.northeastern.edu/resnet>)

Speare Commons

617.373.HELP (x4357)

resnet@northeastern.edu

ResNet—a service of Information Technology Services and Housing Services—provides internet access to all students living in Northeastern residence halls. The ResNet Resource Center, located in Speare Commons, provides students with support for the HuskyCable HDplus service, mobile devices, gaming systems and other devices, student email, computer troubleshooting, and repair services for Apple and Dell computers.

Printing

Website (<https://www.northeastern.edu/its/services/printing-plan>)

help@northeastern.edu

The Northeastern Printing Program provides a free allowance for printing each year to students, faculty, and staff. Each September, as an active member of the community, you are given an allowance of printing credit equivalent to \$120 on your Husky Card to use at your discretion at any of the ITS-managed printers located across all Northeastern campuses. Print credits do not carry over from one academic year to the next.

Print jobs can be directly sent to the appropriate printer queue from any ITS computer labs or from your own computer by using the Virtual Print Client software available from Software Downloads on myNortheastern

(<https://myneu.neu.edu>) to print remotely. When you locate a printer associated with the appropriate printing queue, simply swipe your Husky Card, select your print job, and it will print.

Appropriate Use Policy

Appropriate Use Policy webpage (<http://www.northeastern.edu/aup>)

The information systems of Northeastern University are intended for the use of authorized members of the community in the conduct of their academic and administrative work. The Appropriate Use Policy (AUP) describes the terms and conditions of Northeastern information systems use.

Training Services

Snell Library
training@northeastern.edu

Information Technology Services provides a variety of web-based courses to all members of the Northeastern community including Mac tutorials, MS Office tutorials, some application-specific training provided by the application vendors, and via Lynda.com. Using Lynda.com, students with a myNortheastern username and password have 24/7 access to an extraordinary breadth of training modules. Web-based training is an innovative, self-paced learning method that allows students, faculty, and staff to train anytime or anywhere, using a computer with an internet connection.

To register for a class, visit the training section of the ITS website.

Academic Technology Services (ATS)

Website (<http://www.ats.neu.edu>)
212 Snell Library
ats@northeastern.edu

For graduate students performing teaching assistant/graduate assistant work, Academic Technology Services (ATS) is a resource for choosing and implementing technological solutions for a wide range of classroom goals. Whether creating online classes or incorporating flipped classroom techniques into on-ground classes, ATS offers consultation and support for implementation. Additionally, ATS manages the Discovery Lab, located on the first floor of Snell Library, which is a space for showcasing ideas and innovations at Northeastern. The Discovery Lab is an area to host both events and exhibitions.

Campus Resources

- Career Development (p. 18)
- Campus Recreation (p. 18)
- Center for Advancing Teaching and Learning Through Research (p. 18)
- Disability Resource Center (p. 19)
- Graduate Student Government (p. 19)
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- We Care (p. 21)

Career Development

Website (<https://www.northeastern.edu/careers>)

103 Stearns Center
617.373.2430
617.373.4231 (fax)
careerservices@northeastern.edu

Career Development provides resources, guidance, and opportunities that help students and alumni with the following:

- Choose a major and explore career options that fit their unique attributes
- Make career decisions that will engage them in productive and fulfilling work
- Prepare for and conduct successful job searches
- Create meaningful and effective engagement with employers
- Contribute to meeting global and societal needs

Northeastern's Career Development does not guarantee employment nor do student referrals to prospective employers regarding job openings.

Campus Recreation

Marino Recreation Center
617.373.4433
Website (<https://www.northeastern.edu/campusrec>)

Exercise your body, mind, and spirit. The campus recreation program provides many outlets to help clear your mind and recharge your spirit. Our fitness facilities, unique among Boston-area colleges and universities, are open year-round. All programs were designed with you in mind; so whether you enjoy group fitness classes, ice hockey or street hockey, basketball, weight training, or swimming, campus recreation has something for everyone.

Full-time Northeastern students in good standing who are enrolled in classes and/or co-op, or scheduled for vacation but have paid the campus recreation fee, have access to the Marino Recreation Center, Cabot Center, and the Badger and Rosen SquashBusters Center. Part-time students in good standing have access during any academic quarter in which they are enrolled and attending classes, as long as they have requested and paid the campus recreation fee. Help us maintain a safe and secure environment. Your Northeastern photo ID card—which must be a current, valid, and active card—must be swiped upon arrival in order to enter all facilities.

Center for Advancing Teaching and Learning Through Research

215 Snell Library
617.373.3157
617.373.7779 (fax)
learningresearch@northeastern.edu
Website (<http://www.northeastern.edu/learningresearch>)

The Center for Advancing Teaching and Learning Through Research (CATLR) provides professional development for all graduate students at Northeastern in their roles as teaching assistants, instructors, and future faculty and professionals. We provide a range of opportunities for graduate students to develop effective teaching skills, including course

design and communication. CATLR is committed to supporting your success at Northeastern and beyond, and we welcome you to:

- Participate in workshops and other events to learn about effective practices in teaching and course design and to adapt them for your own current or future use.
- Meet one-on-one with a CATLR consultant to discuss any aspect of teaching or preparing for the academic job market and postdoctoral careers, including developing course syllabi, teaching statements, teaching portfolios, and diversity statements.
- Invite a CATLR consultant to observe your class, recitation, lab, studio, or guest lecture and to meet with you afterward to share and discuss their observations in relation to your own goals and reflections.
- Register for the self-paced Future Faculty Program to prepare for and reflect on the various dimensions of teaching in higher education.

All of CATLR's services are provided on a formative and confidential basis.

Disability Resource Center

20 Dodge Hall
617.373.2675
617.373.7800 (fax)
www.northeastern.edu/drc

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act as Amended (ADAAA) to participate fully in the activities of the university. According to the ADAAA definitions, a person with a disability is one with a physical, mental, emotional, or chronic health impairment that *substantially limits* one or more major life activity such as caring for oneself, performing manual tasks, seeing, hearing, eating, sleeping, walking, standing, lifting, bending, speaking, reading, breathing, learning, working, concentrating, thinking, communicating, and nonvolitional bodily functions.

Students should provide documentation to the DRC at their earliest convenience to allow for sufficient time for review. After the documentation has been reviewed, a disability specialist will contact the student regarding appropriate next steps.

Graduate Student Government

Website (<http://www.northeastern.edu/gsg>)
236 Curry Student Center
617.373.4502
GSG@northeastern.edu

The Graduate Student Government (GSG) represents graduate students at Northeastern University, serving as a liaison among the administration, faculty, staff, and students. The role of the GSG is to address the professional, financial, social, and representative needs of the graduate community as follows:

- Seeks to improve the quality of graduate student life, academic affairs, and research
- Offers access to professional development resources and networking
- Facilitates cooperation among the graduate student groups and organizations
- Distributes the graduate activity fee

- Sponsors graduate orientation programs
- Fosters interdepartmental and intercultural communication and appoints graduate representatives to serve on university committees

All graduate students are eligible to be part of the GSG Senate. Representatives from the eight graduate and professional schools assist the executive board in the affairs of this governing organization. The senate meets regularly during the fall and spring semesters, and all meetings are open to all students.

Husky Card Services

4 Speare Commons
617.373.8740
HuskyCard@northeastern.edu

Husky Card Services prints Husky Cards, the official identification card of Northeastern University. The Husky Card is used for many purposes, including access to locations, parking, laundry, printing, vending machines, dining services, off- and on-campus vendors, and library book checkout.

Students who are registered for courses on the Boston campus of Northeastern University can come to the Husky Card Services office to obtain their card. A government-issued photo ID must be presented when receiving your Husky Card.

Students who have registered for courses at the Charlotte and Seattle campuses may contact their campus to obtain a Husky Card.

Students who are registered in online courses only are eligible to have their Husky Cards mailed to them. If you are an online student and would like a Husky Card mailed to you, send an email to HuskyCard@northeastern.edu (HuskyCard@neu.edu) with your name, Northeastern University ID number, address, and college/degree. Once we have this information, we will open the photo upload option through your myNEU account, which will allow you to upload a photo. Once your photo is submitted, it will take up to **two weeks** for the photo to be approved and the Husky Card to be mailed to you. Allow more time for international mail.

John A. and Marcia E. Curry Student Center

Website (<http://www.northeastern.edu/curry>)
434 Curry Student Center
617.373.2642

This campus "living room" serves as a hub of student activity. It is the crossroads of community life at Northeastern, offering cultural, social, and recreational programs and services.

The center offers ATM machines, an art gallery, the afterHOURS late-night club, food court and cafeteria, game room, lounge space, meeting rooms, Starbucks Coffee, student organization offices, a TV viewing area, and WRBB-FM.

Student center facilities may be reserved by recognized student organizations and university departments. The university reserves the right to limit the use of its facilities when the general public is involved.

Northeastern University Bookstore

Main Campus
Curry Student Center, ground floor

617.373.2286

Website (<http://www.northeastern.bncollege.com>)

The bookstore operates during the entire academic year, but days and hours may vary in accordance with the university's calendar.

Purchases can be made by cash, check, American Express, MasterCard, VISA, Discover, or Husky Card.

Parking

Student Financial Services

354 Richards Hall

617.373.7010

Commuting Services (<http://www.northeastern.edu/commutingservices>)

Parking spaces in the university lots and garages are filled on a first-come, first-served basis. To park in a university lot or garage, students must have a valid parking permit displayed on their vehicles. A parking permit does not guarantee a parking space.

New students may purchase a day-parking permit. Only eligible students will receive a permit. To be eligible, students must be registered for a class or on co-op. The cost of the permit will be charged to the student's tuition account.

Overnight parking permits are limited.

To apply for a parking permit, visit the self-service tab on myNEU and select "Apply for Parking."

To park in a handicap space, individuals must purchase a parking decal and display a state-issued handicap license plate, placard, or hangtag. Handicap parking spaces are located throughout campus. Please use the campus map (http://www.northeastern.edu/commutingservices/wp-content/uploads/2015/08/CampusMap2015_11x17.pdf) as a guide for handicap-accessible parking spaces on campus.

Operators of vehicles driven or parked on university property are responsible for knowing and complying with university driving and parking regulations.

Refer to the parking website (<http://www.northeastern.edu/commutingservices>) for more information.

Public Safety

Public Safety Division Administrative Offices

100 Columbus Place

617.373.2696

Website (<http://www.northeastern.edu/publicsafety>)

Police Operations Center

100 Columbus Place

617.373.3333 (EMERGENCY—police, fire, or medical)

617.373.2121 (nonemergency regular business)

617.373.3934 (TTY emergency or nonemergency)

Personal Safety Escort Service

617.373.2121

The Public Safety Division's mission is to provide a comprehensive program of police, security, fire safety, and emergency medical services to help ensure the campus remains a safe and pleasant place to live, work, and learn.

The University Police Department is the largest and most visible unit of the division and consists of professionally trained officers charged with the protection of life and property and the prevention and detection of crime on campus. University police officers have the same authority as municipal police officers and enforce both the Massachusetts laws and university regulations. Regulations mandate that students show their university ID cards whenever requested to do so by any university police officer. For more information, visit the public safety website (<http://www.northeastern.edu/publicsafety>).

The Public Safety Division takes pride in its comprehensive plan to minimize crime and protect the safety of the Northeastern community. But the division needs students' help and urges students to take responsibility for creating and maintaining a safe and secure environment. For tips on safety around campus and in the neighborhood, pick up a brochure or visit the website.

Fire egress drills are held each semester in all residence halls to familiarize residents and staff with the alarm system and the evacuation routes. Special fire safety and evacuation training is provided for students, faculty, researchers, and staff in high-risk laboratories. All building occupants are required to participate when an egress drill is held. For tips on fire safety, pick up a brochure or visit the website.

The Personal Safety Escort Service provides a door-to-door escort from one on-campus location to another whenever personal safety is a concern. After receiving your call, the university police dispatcher will assign an officer or cooperative education cadet within 10 to 15 minutes (if necessary, the dispatcher will advise you of any expected delays).

A special, nighttime off-campus escort service runs from dusk to dawn to transport students who reside within approximately one mile of the campus from the campus to their residence after dark. The only destination this service will take you to is your residence. A van stops at Snell Library and the Ruggles Public Safety Substation on the hour from 7:00 p.m. to 6:00 a.m. to pick up students.

If you are sexually assaulted, either by a stranger or an acquaintance, get to a safe place, then telephone the university police and a friend or family member. A university police officer who is a state-certified sexual assault investigator will meet with you and address your physical and emotional needs, as well as inform you of your rights and options regarding filing charges against the perpetrator. The police will provide you with important information about on-campus as well as off-campus counseling services as well as other options regarding changing your residence or class schedule.

If the sexual assault took place off campus, the University Police Department can still provide emergency medical treatment, transportation to a medical facility, and counseling referrals. However, the criminal investigation of such cases is the responsibility of the police department that has jurisdiction in the locale where the assault took place, and university police will assist you with making contact with the appropriate agency.

University Health and Counseling Services

Website (<http://www.northeastern.edu/uhrs>)

Forsyth Building, Suite 135

617.373.2772

UHCS@northeastern.edu

The University Health and Counseling Services team is eager to serve you. We hope that you will use our center as a resource to help stay

healthy, physically and mentally, and for care when you are ill or injured, depressed, or stressed.

We Care

Website (<http://www.northeastern.edu/wecare>)

104 Ell Hall

617.373.4384

we_care@northeastern.edu

We Care is a program that assists students experiencing unexpected challenges maintaining their academic progress. We Care works with the student to coordinate among university offices and to offer appropriate on- and off-campus referrals to support successfully resolving issues.

- Tuition and Fees (p. 22)
- Student Refunds (p. 22)
- Financial Aid Assistance (p. 23)
- Bill Payment (p. 25)

Tuition and Fees

Tuition

Graduate Program	Cost per Credit Hour
Applied Behavioral Analysis	\$1,140
Arts, Media and Design	\$1,505
Audiology (AuD) (per term)	\$12,894
Audiology (AuD) clinical (per term)	\$9,585
Biotechnology, Bioinformatics, Applied Math	\$1,503
Bouvé College of Health Sciences	\$1,500
Business Administration, including online graduate programs	\$1,600
College of Professional Studies— Doctorate in Education	\$829
College of Professional Studies— Graduate on campus and online (excluding MEd and MAT)	\$698
College of Professional Studies— MEd and MAT programs	\$574
College Professional Studies - MPS Analytics and Commerce Econ. Development-Students Entering 07/01/18	\$760
College Professional Studies - MPS Informatics & MPS Digital Media - Students Entering 07/01/18	\$738
College Professional Studies - Master of Education Higher Ed. Administration Concentration - Students Entering 07/01/18	\$607
Computer and Information Science	\$1,540
Direct Entry PharmD (per term)	\$25,225
Direct Entry PharmD Clinical	\$14,875
Engineering	\$1,569
Health Informatics	\$1,212
Information Assurance	\$1,450
Marine Biology	\$1,390
MS in Accounting	\$1,600
MS in Innovation	\$1,600
MS/MBA (full program)	\$68,000
Nurse Anesthetist clinical (in addition to tuition)	\$3,755
Nursing, direct entry (per term)	\$17,290
Physical Therapy— postbaccalaureate direct entry (DPT) (per semester)	\$17,450

Physical Therapy— postbaccalaureate direct entry (DPT) clinical (per semester)	\$11,901
Physician Assistant (per term)	\$14,955
RN to BSN online	\$830
Science	\$1,503
Social Sciences and Humanities	\$1,295
Dissertation (flat rate)	Equivalent to 1.5 times the college per-credit-hour rate listed above
Master's or doctoral continuation fee (flat rate)	Equivalent to the college per-credit-hour rate listed above

Fees

Item	Fee
Student center fee (per term, Boston campus only)	\$70 full-time \$10 part-time
College of Professional Studies student center fee (per quarter, Boston campus only)	\$8.25
Student recreation fee (per term)	\$56 full-time \$25 part-time
College of Professional Studies student recreation fee (per quarter, Boston campus only)	\$10
Student activities fee (per year, Boston campus only)	\$15
Health and counseling fee	\$225
Health plan fee (yearly, optional)	Visit the NUSHP website: www.northeastern.edu/nushp (http://www.northeastern.edu/nushp)
Parking (optional, per semester)	Visit the parking website: www.northeastern.edu/commutingservices (http://www.northeastern.edu/commutingservices/)
International student fee	\$350

Student Refunds

Refund Policies

Inquiries about credit balances should be directed to Student Accounts. Refund requests for credit balances are made via the "Services & Links" section on the student's myNortheastern portal (<https://my.northeastern.edu>). Credit balances will be refunded to the student, unless otherwise directed by the student or the bill payer.

Note the following exception: If the credit in your account is due to a Parent Plus/Alternative Loan and/or payment plan payment(s), the borrower or bill payer must complete the Refund Authorization form (<https://studentfinance.northeastern.edu/forms>) prior to releasing the funds requested.

Official Withdrawal Adjustments

Students who officially withdraw, either from a course or from the university, during an academic term will receive a tuition refund based on the policy specified below. Institutional funds awarded by Northeastern University will be adjusted based on the actual charges incurred during the semester. Funds from federal Title IV programs will be returned to the government according to federal regulations. The federal government Return of Funds Policy dictates that a student's eligibility for federal financial aid is determined by the number of days enrolled during the semester. The refund will be calculated from the day the student submits a notification of withdrawal to the Office of the University Registrar.

Tuition credits are granted through the first five weeks of a semester or first four weeks of a half-semester, based on the date of the official withdrawal processed by the Office of the University Registrar. Nonattendance does not constitute official withdrawal. Credit policies vary according to the duration of the course. Typical tuition adjustments are made according to the following schedule. (The end of week three corresponds with the last day to drop a class without a W grade.)

DURING FULL SEMESTER

During weeks one through three—100% refund

During the fourth week—60% refund

During the fifth week—40% refund

After the fifth week—no refund

SUMMER HALF SEMESTERS AND COURSES OFFERED IN PART-OF-TERM FORMAT

During weeks one through two—100% refund

During the third week—50% refund

During the fourth week—25% refund

After the fourth week—no refund

Leave of Absence Tuition and Fee Adjustments

Leaves are granted when a student cannot complete the current academic period for health or personal reasons but is confident that he or she will reenroll (additional information about leaves of absence (p. 27)). Northeastern's medical and emergency leave policy states that all **tuition** paid for such periods of leave will be held by the university and applied to future charges. Outstanding balances (including unpaid balances) for the academic semester in which the leave is taken are still due to the university during that semester. Financial aid recipients should contact the graduate financial aid office to understand the effects on aid received. Medical leave information is available at the University Health and Counseling Services website (<https://www.northeastern.edu/uhrs>). Students who take a leave of absence should be aware that more than six months on leave will cause many student loans to go into repayment.

Disability Resource Center Tuition Adjustments

Students who are registered with Northeastern University's Disability Resource Center (DRC) and are approved for reduced course loads may be eligible to petition the center for tuition adjustments directly related to their documented disability. Further information is available from the DRC.

State-Specific Refund Policies

For refund information for Maryland, Oregon, and Wisconsin residents, visit the Student Financial Services website (<https://studentfinance.northeastern.edu/policies-procedures>).

Financial Aid Assistance

Student Financial Services

354 Richards Hall

617.373.5899

617.373.2897 (College of Professional Studies)

sfs@northeastern.edu

studentfinance.northeastern.edu ([https://](https://studentfinance.northeastern.edu)

studentfinance.northeastern.edu)

Northeastern University is available to assist students in developing a plan for financing a Northeastern education. Through a variety of options—including federal financial aid, Northeastern's monthly payment plan, supplemental loans, and your own resources—a plan can be designed that will make your education costs affordable. Visit the Student Financial Services website (<https://studentfinance.northeastern.edu>) or call 617.373.5899 for additional information.

Federal Financial Aid

Student Financial Services is committed to working with you to identify federal financial aid options that can help make a Northeastern education affordable. To apply for federal financial aid programs, students must submit the Free Application for Federal Student Aid (FAFSA) (<https://fafsa.gov>) form. Meeting priority filing dates will allow the review of your eligibility for all available financial aid programs. The priority deadline for graduate students is March 1. For information regarding your financial aid application, log into your myNortheastern (<https://my.northeastern.edu>), click on "Services & Links" and select "My Financial Aid Status."

Students in the graduate colleges must meet the following criteria to be eligible for federal financial aid:

- Be enrolled in at least 6 credits per term for federal financial aid, unless you are on a co-op, clinical rotation, or residency or are enrolled in a full-time or part-time stand-alone course.
- Be citizens or eligible noncitizens of the United States
- Be matriculated in a degree-granting program
- Have received a high school diploma or GED
- Be registered with Selective Service (if required)
- Not be convicted of a drug-related crime in the last year
- Not be in default from previous student loans
- Maintain satisfactory academic progress

How to Apply

File the FAFSA by March 1 in order to be considered for all available federal aid. Northeastern's FAFSA school code is 002199.

To electronically sign your FAFSA, you will need your Federal Student Aid ID (FSA ID). If you do not have one or have forgotten your FSA ID, visit the Federal Student Aid (<https://studentaid.ed.gov/sa/fafsa/filling-out/#get-fsaid>) webpage to obtain one before starting the FAFSA online.

Awarding Timelines

New students are awarded on an ongoing basis throughout the spring after we have been notified that they have been accepted into their program.

Returning students are awarded throughout the summer.

Typical Graduate Financial Aid Award

Students who file the FAFSA will be eligible to receive up to \$20,500 in a Federal Direct Unsubsidized Loan, assuming that all eligibility requirements have been met.

For more information about the Federal Direct Loan Program, visit the Student Financial Services website (<https://studentfinance.northeastern.edu/applying-for-aid/graduate/types-of-aid>).

Graduate Assistantships and Scholarships

These positions and awards are offered directly by the individual graduate schools or academic departments. Students seeking such assistance should contact their graduate school for eligibility criteria.

To review a description of available graduate assistantships and scholarships, visit the Student Financial Services website (<https://studentfinance.northeastern.edu/applying-for-aid/graduate/types-of-aid>).

Health Professions Student Loans and Nursing Student Loans

These federal loan programs carry a 5 percent interest rate during repayment. You must demonstrate financial need and meet Northeastern's priority filing date for consideration, as funds are limited. Northeastern serves as the lender, and the loan is made with government funds. Repayment is made to Northeastern. For nursing loans, there is a 9-month grace period prior to repayment following graduation, withdrawal, or a drop below half-time status. The grace period is 12 months for Health Professions Student Loans. Repayment on the loan is for a period of up to 10 years with a minimum 40 dollar monthly payment. The loan may be prepaid at any time without penalty.

To be eligible for the Health Professions Loan Program, applicants must be enrolled full-time in the School of Pharmacy in the Bouvé College of Health Sciences. To be eligible for the Federal Nursing Student Loan, applicants must be enrolled at least half-time in the School of Nursing in the Bouvé College of Health Sciences.

Physician Assistant Loan

The Physician Assistant Loan is awarded to full-time students in the graduate physician assistant program who demonstrate financial need after filing the FAFSA. The interest rate is fixed at 7 percent. Northeastern University is the lender, and repayment is made directly to Northeastern. The loan amounts range from \$1,000 to \$3,000, depending upon the student's financial need. Repayment begins one month after the student ceases to be enrolled full-time at Northeastern University.

Federal Direct Graduate PLUS Loan

Unlike Federal Direct Stafford Loans, the Federal Direct Graduate PLUS Loan requires credit approval by the direct loan servicer. Application requests are submitted to Student Financial Services. Students have up to 25 years to repay the Federal Direct Graduate PLUS Loan. The Federal Direct Graduate PLUS Loan can be consolidated with Federal Direct Stafford and Perkins loans upon graduation.

Graduate PLUS loans do not have a grace period. Repayment begins after a student is no longer enrolled at least half-time. Students who drop below half-time status and then reenroll above half-time status will need to request their loans be deferred again through their assigned direct loan servicer.

Graduate students with myNortheastern access can apply for a Federal Direct Graduate PLUS Loan through the student portal by clicking on the "Federal Graduate PLUS Loan Application" link under "Services & Links." Students who do not have portal access or have trouble applying via the portal should download, print, and complete the paper

application that can be found at Student Financial Services (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).

Supplemental Student Loans

There are a number of educational loan programs available to assist students in covering their expenses over and above any federal financial aid that may be awarded to them from Student Financial Services. Most private lenders have credit and income requirements that must be met before being approved for these programs. Additional information regarding private loans is available at Student Financial Services (<https://studentfinance.northeastern.edu/billing-payments/financing-options>). Student Financial Services recommends to students that, when researching the loan and lender that best meets their needs, they make sure they take into consideration the interest rate, origination, disbursement, or repayment fees and the quality of customer service.

General Financial Policies and Procedures

FINANCIAL AID POLICIES

Student Financial Services reserves the right to adjust a student's initial Offer of Financial Assistance based upon information brought to the office's attention subsequent to extension of the offer, including, but not limited to, increased or new institutional scholarships, outside scholarships, or revised family financial data.

APPEAL/CHANGE IN CIRCUMSTANCES

If the student feels that the aid process does not accurately reflect his or her situation, or if family circumstances change during the year, the student should notify his or her graduate student financial services counselor for further evaluation. We may request additional documentation from you that might indicate a change in financial circumstances.

CHANGE IN ENROLLMENT STATUS

Students must notify Student Financial Services about any change in planned period of enrollment, whether due to withdrawal from a class, a leave of absence, a change in co-op or academic division, or withdrawal from the university. Students should be aware that any change in enrollment status may result in a change in federal or institutional aid eligibility. It is the student's responsibility to notify Student Financial Services about any change in enrollment status and to ensure understanding of the ramifications of such changes. It is highly recommended that whenever possible, students discuss the impact of such changes with their financial aid counselor before making them.

OUTSIDE SOURCES OF AID

Students must notify Student Financial Services of any aid received from outside sources, such as scholarships. Receipt of these sources may require an adjustment to a student's financial aid award.

REAPPLICATION PROCESS

Students must reapply for financial aid each year by filing the FAFSA (<https://fafsa.ed.gov>) online. To receive priority consideration for aid, the federal processor must receive the FAFSA by March 1.

SATISFACTORY ACADEMIC PROGRESS

To continue receiving financial aid, graduate students must maintain the academic requirements for satisfactory progress set forth by their college. Refer to the Student Financial Services website (<https://studentfinance.northeastern.edu/policies-procedures/satisfactory-academic-progress>) for more information about how satisfactory progress impacts financial aid eligibility.

VERIFICATION

If a student is selected for verification, Student Financial Services may be required to collect additional documents, including tax returns and other

financial documents, to verify the information provided on the FAFSA. Aid cannot be disbursed until this process is completed.

RETURN OF TITLE IV FUNDS

Northeastern University is required by federal statute to recalculate federal financial aid eligibility for students who withdraw, drop out, are dismissed, or take a leave of absence prior to completing 60 percent of a term. Recalculation is based on the percentage of earned aid using the Federal Return of Title IV funds formula. Federal regulations require students to obtain at least one A, B, C, D, or S in at least one course for the term; students who receive all unsuccessful grades for a term (F, NE, W, I, U) may be considered unofficially withdrawn from the term and subject to an aid recalculation, including the possible loss of financial aid for that term.

Bill Payment

Student Financial Services

354 Richards Hall
617.373.2270
617.373.8222 (fax)
studentaccounts@northeastern.edu

Full payment of tuition and other related charges is due prior to the start of the term as specified on the original bill. For questions related to the billing process, late fees, payment methods, tuition payment plan, and refunds, contact us at the phone number and email address provided above.

Payment of Tuition

Full payment of tuition, residence hall fees, and other related charges is due before the start of each semester. Payments will be accepted for billable charges only. The university is not able to process payments for more than the balance due on the student's account. Accepted methods of payment are:

- Electronic check (e-check). Payments can be made online via NUPay on the myNortheastern portal (<https://my.northeastern.edu>) and are processed the same day they are received by the university.
- Through the monthly payment plan, administered through Tuition Management Systems. For additional information, visit the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).
- Supplemental loans. Review options at the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/financing-options>).
- Additional payment options and details can be found at the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/payment-methods>).
- International payments using Flywire. Northeastern University has partnered with Flywire to streamline the international wire payment process to the university. This service provides students and their families a safe, cost-effective, and convenient method of making payments to Northeastern University in foreign currencies. Review how to initiate payment at the Student Financial Services website (<https://studentfinance.northeastern.edu/billing-payments/payment-methods>).

Bills must be paid promptly. If a bill has not been received by the first week of the semester, contact Student Accounts. Transcripts and other academic records will not be released until all financial obligations to the university have been met.

Student Financial Responsibility Agreement

As compelled by federal law, all students who enroll in classes at Northeastern University are required to complete and accept the Student Financial Responsibility Agreement (SFRA). This agreement must be completed once per academic year and is located on the student's myNortheastern portal. Failure to complete the SFRA will result in a hold that prevents registration.

Discrepancies in Your Bill

Discrepancies in your bill should be addressed in writing via email to Student Financial Services at studentaccounts@northeastern.edu. Include your name, account number, dollar amount in question, date of invoice, and any other information you believe is relevant.

If there is a billing problem, pay the undisputed part of the bill to avoid responsibility for any late fees.

Late Fees

Late fees can be placed on accounts any time after the due date if the account remains fully or partially unpaid. The university typically waits, however, until after the conclusion of the add/drop period, for the specified semester, prior to assessment of late fees. These fees are based on the amount past due at the time of assessment, and can range from \$75 to \$200. Late fees are assessed once per semester.

If a student or payer wishes to dispute a late fee assessment, they must do so, in writing, to studentaccounts@northeastern.edu. Please be sure to include the student's name, NU ID, and reason for the dispute in the email.

In cases where students default on financial obligations, the student is liable for the outstanding balance, collection costs, and any legal fees incurred by the university during the collection process.

Tuition Paid Directly by Employers

When a third party pays tuition directly to the university, the student must provide the Office of Student Accounts with a purchase order or a written statement of intent to pay by the third party prior to the first week of classes. If there are stipulations associated with the payment agreement, such as a minimum grade level, then the student must either pay the university directly or enroll in one of the payment options. Documents pertaining to a third-party agreement can be emailed to thirdparty@northeastern.edu or mailed to the address below.

Student Financial Services/Third Party
354 Richards Hall
360 Huntington Avenue
Boston, MA 02115

617.373.8222 (fax)
thirdparty@northeastern.edu

Tuition Reimbursement

Many companies, embassies, and agencies directly reimburse students for their educational expenses upon successful completion of courses. In these situations, the student is responsible for paying the bill at the beginning of the semester or selecting another payment option. Tuition may not be left unpaid pending reimbursement by a third party.

Tuition and Fees and Default Policy

Tuition rates, all fees, rules and regulations, and courses and course content are subject to revision by the president and the Board of Trustees at any time. In cases where the student defaults on his or her tuition, the student shall be liable for the outstanding tuition and all reasonable

associated collection costs incurred by the university, including attorneys' fees.

Mandatory Student Health Plan

Since September 1989, Massachusetts law (M.G.L. c.15A, § 18) has required every full-time and part-time student enrolled in a certificate, diploma, or degree-granting program in a Massachusetts institution of higher learning to participate in a Student Health Insurance Program (SHIP) or in a health benefit plan with comparable coverage. Under SHIP, a part-time student is defined as one who is enrolled in at least 75 percent of the full-time curriculum (College of Professional Studies graduate students—7 credits; part-time graduate students—6 credits).

Students who have comparable health plan coverage may waive the Northeastern University Student Health Plan (NUSHP) by completing a waiver on their myNortheastern portal (<https://my.northeastern.edu>) by the designated deadline date each academic year. For deadlines and additional information, visit the NUSHP website. (<http://www.northeastern.edu/nushp>)

University-Wide Academic Policies and Procedures

- Graduate Schools Academic Policies (p. 27)
- Academic Calendars (p. 28)
- Student Records and Transcripts (p. 29)
- Final Examinations and Related Policies on Other Exams (p. 32)
- Graduation Requirements (p. 32)
- Family Educational Rights and Privacy Act (FERPA) (p. 32)
- Student Right-to-Know Act (p. 33)
- Code of Student Conduct (p. 33)
- Appeals Policies and Procedures (p. 33)
- General Regulations (p. 35)
- Students' Bill of Academic Rights and Responsibilities (p. 41)

Graduate Schools Academic Policies

Note that this information applies to both undergraduate and graduate students. Not all of the policies and procedures apply to both types of students. *Note:* International students must consult with Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) advisors concerning any of the following items in order to maintain compliance with Student and Exchange Visitor Information System (SEVIS) regulations and institutional policy. It is best to set up an appointment to discuss individual cases and learn about appropriate procedures to follow.

Attendance Requirements

The university expects students to meet attendance requirements in all courses to qualify for credit. Attendance requirements vary; it is the student's responsibility to ascertain what each instructor requires.

Failure to meet attendance requirements may force a student to drop the course, as recommended by the instructor and the college.

Permission to make up work may be granted by instructors for reasonable cause. Requests must be made immediately upon a student's return to class.

Absence Because of Student Activities

If students must miss classes to participate in athletic contests or other forms of scheduled intercollegiate activity, they are entitled to makeup privileges. Faculty members may require a written statement from the administrator in charge of the activity.

Absence Because of Illness

A student who is absent from school for an extended period of time must inform his or her college by email from an official university email account or by telephone.

Absence Because of Religious Beliefs

The university maintains the following guidelines regarding student absences because of religious beliefs:

Any student who is unable, because of his/her religious beliefs, to attend classes or to participate in any examination, study, or work requirement shall be provided with an opportunity to make up such examination, study, or work requirement that he/she may have missed because of such absence on any particular day; provided, however, that such makeup examination or work shall not create an unreasonable burden upon such school. No fees of any kind shall be charged by the institution for

making available to the said student such opportunity. No adverse or prejudicial effects shall result to any student because of availing himself/herself of the provisions of this section. (Massachusetts General Laws, Chapter 151C, Section 2B, 1985)

Absence Because of Jury Duty

Members of the university community are expected to fulfill their obligations to serve on a jury if called upon.

A student selected for jury duty should inform his or her instructors and/or activity advisors. They will provide a reasonable substitute or compensatory opportunities for any required work missed. Absence will not be penalized in any way.

University Leave of Absence Policies

GENERAL POLICY

Students who wish to take a leave of absence are encouraged to apply for the leave by submitting a petition through the myNEU web portal (<http://myneu.neu.edu>) one month prior to the start of the semester during which they plan to take the leave.

The usual limit for a leave of absence is one academic semester. International students must contact the OGS (<http://www.northeastern.edu/ogs>) regarding specific leave of absence procedures. A leave of absence (general, medical, or emergency), if approved, will take into account the following conditions:

- Students who do not return at the end of the leave will be withdrawn and must submit a petition for subsequent readmission to the program.
- Students must return to classes, not cooperative education (co-op).
- Students must be currently enrolled in academic courses or co-op. If a student is withdrawn for any reason, a request for a leave of absence cannot be considered until the withdrawal is resolved.
- Students who receive financial aid should meet with a financial aid counselor before going on a leave.
- Students in university housing should refer to Residential Life and Housing for policy information.
- Students' enrollment status cannot include more than one academic year of consecutive nonclass enrollments.
- After the 11th week of the semester, a student may apply for a leave of absence only for medical reasons or due to military deployment.
- Students who take leaves should be aware that more than six months on leave will cause many student loans to go into repayment. Students should see their financial aid counselor for more information on how their loans may be affected by a leave of absence.

RETURNING FROM A GENERAL LEAVE OF ABSENCE

Students returning from an approved leave of absence may be required to submit to their college's student services office a notification of intent to return. It should be submitted no later than one month prior to the start of the semester in which they intend to return. Students are required to preregister for courses upon returning from a leave of absence. International students returning from a leave of absence should contact the OGS (<http://www.northeastern.edu/ogs>) regarding SEVIS procedures three to four months prior to anticipated return time.

LEAVE OF ABSENCE DUE TO MILITARY DEPLOYMENT

When a student in the Reserves or in the National Guard is called to active duty, the student must notify his or her college dean's office and provide proof of deployment prior to being deployed. The proof may be faxed, mailed, or hand-carried to the college dean's office. It may take the form of general orders cut by the company commander.

When a student is activated during the term, the university will:

- Excuse tuition for that term. Any payment made will be credited to the student's account.
- Place a "W" on the student's transcript for each class enrollment.

If a student is called to active duty near the end of the term, the student and faculty members may determine that incomplete (I) grades are more appropriate. In this case, tuition will not be waived.

When a student returns to the university after completion of a tour of duty, he or she will notify the college dean's office. The college dean's office will assist the student with registration.

MEDICAL OR EMERGENCY LEAVE OF ABSENCE

Medical leave is an option available to those Northeastern students who develop a major medical condition that precludes class attendance, completion of requirements, and/or co-op. Medical leave petitions must be initiated at University Health and Counseling Services (UHCS). Students are not allowed to take courses for credit toward their degree at Northeastern while on medical leave of absence. International students must contact the OGS (<http://www.northeastern.edu/ogs>) regarding medical leave of absence procedures. Students can petition their college for an exception to take courses elsewhere based on extenuating circumstances.

Students who wish to reenter the university following a medical leave must contact UHCS. Reentry from a medical leave requires receipt of all documentation delivered to UHCS on or around one month prior to the planned reentry to classes. Once all documentation is received by UHCS, it will be reviewed and the student will be notified of the decision. Students must attend classes on the Northeastern campus for the semester they wish to return from medical leave of absence.

More specific information about the medical leave and reentry process, along with the application for leave, can be found at the UHCS webpage (<http://www.northeastern.edu/uhcs/access-to-care/medical-leave-of-absence>).

Emergency leaves may be granted when a student cannot continue attending class after the start of the term due to life-changing situations beyond the student's control.

The university's medical leave of absence and emergency leave policy states that all **tuition** charged for the term in which the leave has been granted will be held by the university and applied toward future tuition charges in the same academic program. Outstanding balances (including unpaid balances) for the academic term in which the leave is taken are still due the university. Tuition adjustments are made depending on the timing of the leave. The adjustments would follow the same schedule as the official withdrawal adjustments. Financial aid recipients must contact their financial aid counselor to understand the effects on aid received.

If the leave extends more than six months, student loans may go into repayment. Students enrolled in the Northeastern University Student Health Plan (NUSHP) will remain enrolled in the plan for the plan year, ending August 31.

Emergency leave petitions are available in college academic student services offices and specify the conditions and procedures under which such leaves may be granted.

MEDICAL WITHDRAWAL

Permanent departure from the university due to the diagnosis of a major medical illness or injury, or psychiatric illness, necessitates a petition for medical withdrawal. The procedure follows that for the medical leave of absence.

University Withdrawal

Students seeking to withdraw from the university for any reason should contact the student services office of their college.

Students may be withdrawn from the university for financial, disciplinary, academic, or health reasons. In the last case, a committee will review the recommendations of the director of health services to determine whether the student should withdraw. The student has an opportunity to present his or her case to the committee. Withdrawals are made only when it is determined that the student is a danger to himself or herself, or to other members of the university community, or when the student has demonstrated behavior detrimental to the educational mission of the university. International students must contact the OGS (<http://www.northeastern.edu/ogs>) regarding any compliance issues implications deriving from university withdrawal.

University-Sponsored Travel

Northeastern University is committed to the health, safety, and security of its students and all other members of the university community. As a global institution, our university members undertake international travel in pursuit of teaching, research, consulting, service, cocurricular activities, and work intended to advance learning and the interests of the university. As a result, the university supports standards and expectations associated with international travel that are designed to reduce personal and university risk.

To ensure the safety of our students, you are required to comply with the university international travel policy when traveling abroad on university-sponsored travel. Such travel may include teaching, research, co-op, service, field studies, and volunteer and administrative work.

In order to provide assistance and support to you while traveling abroad, the university maintains a travel registry. In advance of any planned international travel, all students are required to enter their travel plans along with other requested information into the travel registry. To access the registry, go to the myNEU web portal (<http://myneu.neu.edu>), "Services and Links," and register your travel.

Students are responsible for familiarizing themselves with the university international travel policy and are encouraged to visit the international travel website for guidance.

Academic Calendars

The graduate schools' programs are offered on a semester calendar consisting of fifteen weeks. The College of Professional Studies graduate programs are offered on a quarter calendar consisting of twelve weeks.

Quarter Programs

For student records that include quarter hours, the approved semester-hour conversion rate is (quarter hours) x 0.750. For example, a 4-credit quarter course is equivalent to a 3-credit semester course.

Semester Programs

Traditional semester hours apply.

Student Records and Transcripts

Full-Time Status

Note: Full-time status may be defined differently for federal loan purposes.

A graduate student is considered a full-time student if enrolled in a minimum of 8 semester hours of credit for the semester with the following considerations:

- Students who hold stipended graduate assistantships will be considered full-time if enrolled for a minimum of 6 semester hours of credit.
- Students for whom English is a second language, at the discretion of their departments, will be considered full-time if they are enrolled in a minimum of 8 semester hours or three courses, whichever is less.
- Students holding Dean's scholarships, Diversity fellowships, Double Husky awards, or being supported by Graduate Student Scholarships (GSSs) will be considered full-time if they are enrolled in a minimum of 8 semester hours.
- Students enrolled in Dissertation or Continuation are considered full-time.
- International students enrolled in graduate programs at Northeastern University must consult with the Office of Global Services (OGS) (<http://www.northeastern.edu/ogs>) on all matters regarding the maintenance of full-time status.

Overload Conditions for Graduate Assistants

Graduate assistants are expected to devote full-time effort to their studies and the duties of their award.

They are not permitted to hold any other job during the term of their assistantship; however, they may be offered limited extra work on campus. Graduate assistants who are not on F-1 or J-1 visas can be offered overload work that does not exceed an average of 6 hours a week or 90 hours a semester, for a total of 270 hours a year (or three semesters). As part of this work, graduate assistants may be hired to teach one 3-semester-hour course as an overload during the year (180 hours). The hours worked during the weeks between semesters are included in this total.

The OGS issues and verifies on-campus work authorization to eligible students in nonimmigrant visa classifications. Due to federal regulations, international graduate assistants cannot be offered overload work. All international students must acquire the appropriate work authorization from the OGS, 405 Ell Hall, prior to engaging each and every time in any form of employment.

Grading System

Grades are officially recorded by letters, evaluated as follows.

Letter Grade	Numerical Equivalent	Explanation
A	4.000	Outstanding achievement
A–	3.667	
B+	3.333	
B	3.000	Good achievement
B–	2.667	
C+	2.333	

C	2.000	Satisfactory achievement
C–	1.667	
F	0.000	Failure
I		Incomplete
IP		In progress
NE		Not enrolled
NG		Grade not reported by faculty
S		Satisfactory (pass/fail basis; counts toward total degree requirements)
U		Unsatisfactory (pass/fail basis)
X		Incomplete (pass/fail basis)
L		Audit (no credit given)
T		Transfer
W		Course withdrawal

An I, IP, or X grade shows that the student has not completed the course requirements.

Note: In the College of Professional Studies, the incomplete, or I, grade may be given only when the student was approved to make up a single key requirement of a course, such as a paper or major report. The student and instructor must complete an Incomplete-Grade Contract (<http://www.northeastern.edu/registrar/form-inc-grade.pdf>) before the end of the course. The completed contract should be sent to the Office of Academic and Student Support Services for the signature from the Office of the Dean: 50 Nightingale Hall; fax 617.373.5545; email (cpsadviser@neu.edu). The university has a one-year-limit policy to make up incomplete grades. Students have access to their online course materials in Blackboard for up to one year.

The IP grade is intended for courses that extend over several semesters. The time restrictions on the incomplete grade do not apply to the IP grade. While the IP grade is left unchanged, it is not included in computing the grade-point average (GPA). If the IP grade is never changed, the course does not count toward graduation requirements.

Dropping Courses

Not attending class does not constitute withdrawal. Students receiving a grade of W or NE in any course are responsible for the costs associated with that course. Students must drop courses using processes described below.

IN FALL AND SPRING SEMESTERS

- Through the third week of the semester, students may withdraw without any grade being posted to the transcript. Courses may be dropped via the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>).
- Between the fourth week and the last day of classes, course withdrawals are indicated by a W on the student's record. Courses may be dropped via the myNEU web portal. (<http://myneu.neu.edu/cp/home/displaylogin>) No financial adjustment is made for courses receiving a W grade.
- After the last day of classes, no withdrawals are accepted for any reason. A letter grade for the course will be posted on the transcript.

- Dropping below full-time enrollment may affect financial aid, health insurance eligibility, and the maintenance of proper nonimmigrant visa status.

IN SUMMER HALF SEMESTERS

- Through the second week of the half semester, students may withdraw without any grade being posted to the transcript. Courses may be dropped via the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>).
- Between the third week and the last day of classes, course withdrawals are indicated by a W on the student's record. Courses may be dropped via the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>). No financial adjustment is made for courses receiving a W grade.
- After the last day of classes, no withdrawals are accepted for any reason. A letter grade for the course will be posted on the transcript.
- Dropping below full-time enrollment may affect financial aid.

Pass/Fail System

The individual schools and colleges state how and when the pass/fail system may be used.

Clearing an Incomplete or Changing Other Grades

An incomplete grade may be reported by the instructor when a student has failed to complete a major component of a required course, such as homework, a quiz or final examination, a term paper, or a laboratory project. Students can make up an incomplete grade by satisfying the requirements of the instructor or, if the instructor is absent, the chair of the department. Be aware that instructors' policies on the granting of incomplete grades may vary and that the final decision on an incomplete grade is up to the instructor. The period for clearing an incomplete grade and for changing a grade other than an incomplete or failure (F or U) is restricted to one calendar year from the date it is first recorded on the student's permanent record.

To clear an incomplete grade, a student must obtain an Incomplete-Grade Contract (<http://www.northeastern.edu/registrar/form-inc-grade.pdf>) on which the precise agreement for clearing an incomplete grade is specified and that is signed by the student and the instructor. The student must make an appointment with the instructor to arrange for clearing the incomplete grade. He or she must then complete the form, sign the agreement, and obtain the instructor's signature; leave a copy with the instructor, take one copy to the college academic student services office, and retain a copy as a personal receipt. Any exception to this policy on change of grades must be recommended by the Academic Standing Committee (ASC) of the college in which the course was offered and must be forwarded in writing by the ASC to the registrar for implementation. (Finishing the agreed-upon course work must be completed within one calendar year from the end of the semester in which the course was offered.)

Commencing with grades given in the fall of 1986, the university policy is that any grade outstanding for 12 or more months cannot be changed.

Any exception to this policy on change of grades must be recommended by the ASC of the college in which the course was offered and must be forwarded in writing by the dean to the registrar for implementation.

Repeating Courses

When the appropriate course is available, courses may be repeated in order to earn a better grade. In all cases, the most recent grade earned in a course is the one used in calculating the overall GPA; however, previous grades remain on the transcript followed by the word "Repeat." Consult

your academic advisor before repeating a course. Students are required to pay normal tuition charges for all repeated course work.

Substituting Courses

In some cases, it may not be possible to repeat a course if a student wishes to do so. In certain, unusual circumstances, students may petition to substitute one course for another they have already taken, as long as the subject matter of both courses is substantially alike. With the approval of the student's academic advisor and the agreement of the department that offered the first course taken, a grade received in the new course will be labeled "Substitute" on the transcript and will be treated in the GPA calculation as a "repeat" grade, as described above. The original grade will remain on the student's Northeastern transcript. Consult your academic advisor before enrolling in any proposed substitute course. Students are required to pay normal tuition charges for all substitute course work.

Audit Policy

Graduate students may, with permission, audit one class per term with no additional charge. Students are permitted to petition from the end of the course-add period to the end of the third week of classes. Permission is based on the availability of a seat in the class and is at the discretion of the instructor and college.

Students must obtain advisor approval and meet the prerequisites and any other required approvals for the class. Instructor permission as well as approval by the associate dean of the college offering the course is required. The course work required is at the discretion of the instructor. Once a student opts to audit a course, the audit status of the course cannot be changed. A signed Petition to Audit must be presented to the Office of the Registrar during the designated audit-add period. Excluded courses are co-op, labs, language courses, any off-campus course, any online course, and any course required for the major or degree. Audits carry no academic credit.

Clearing an Academic Deficiency

An academic deficiency occurs when a student fails to complete a course with a satisfactory grade. The deficiency may occur because the student has failed the course or because the student has passed the course but with a grade that does not meet the minimum required by the student's program.

Students who have academic deficiencies may be required to clear them before progressing within the curriculum, especially if the course work is a prerequisite for future course work. Deficiencies can affect the student's expected year of graduation.

With the approval of the appropriate program faculty and/or academic advisor, students can clear deficiencies in the following ways:

1. Repeat the same course at one of Northeastern's colleges, which will result in a "repeat" grade (see "Repeating Courses" policy above).
2. Substitute a comparable course at one of Northeastern's colleges, which will result in a "repeat" grade.

Appeal of Final Grades

Under certain circumstances, students have the right to appeal final grades given by either academic faculty or cooperative education coordinators. Criteria and procedures can be found under Appeals Policies and Procedures.

GPA

Numerical equivalents for scholastic averages are weighted according to the number of hours the course carries. For example, suppose a student

receives a grade of B in a course carrying 4 semester hours and a grade of A in a course carrying 1 semester hour. The weightings for these example courses are as follows:

Grade	Numerical Equivalent	Semester Hours	Weight
B	3.000	4	12
A	4.000	1	4
Totals:		5	16

The GPA for both courses would then be the total weight (16) divided by the total semester hours (5), or 3.200. Grades of I, IP, S, U, and X are not included in the calculation of the GPA.

Minimum Cumulative GPA

Grades submitted to satisfy, in whole or in part, the requirements for any graduate degree or certificate of advanced study must yield a cumulative GPA of 3.000 or higher. This requirement may be supplemented by additional restrictions established by the graduate program or the college's graduate office such as, but not limited to, the maximum number of individual courses with grades below 3.000 that may be obtained without being required to withdraw or a minimum GPA in each semester.

Students falling below 3.000 are placed on academic probation. If the student remains on academic probation for two semesters, he or she may be terminated from the graduate program.

Not more than two courses or 6 semester hours of credit, whichever is greater, may be repeated to satisfy the requirements for the degree. The last grade earned in each of these repeated courses is counted in the calculation of the cumulative GPA.

Any incomplete grades must be made up within one calendar year from the semester in which the student took the class that resulted in the incomplete course grade.

More information regarding course grading and academic disputes may be found at "Academic Appeals" under "Appeals Policies and Procedures."

Grade Reports

Grades are available to students approximately three days after the end of each semester via the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>). A missing grade means that none was received from the instructor. Grades received late from faculty are processed as they are received.

Transcripts

Currently enrolled students may obtain unofficial transcripts from the myNEU web portal (<http://myneu.neu.edu/cp/home/displaylogin>) and may also order official transcripts through myNEU. For further information on transcript requests, visit the registrar's website. (http://www.northeastern.edu/registrar/trans_request.html) All questions concerning transcript requests should be directed to 617.373.2300, (TTY) 617.373.5360.

Northeastern University Course Numbering

UNDERGRADUATE

0001–0999	Orientation and basic No degree credit
1000–1999	Introductory level (first year)

2000–2999	Survey, foundation, and introductory courses, normally with no prerequisites and designed primarily for students with no prior background Intermediate level (sophomore/junior year)
3000–3999	Normally designed for sophomores and above but in some cases open to freshman majors in the department Upper-intermediate level (junior year)
4000–4999	Designed primarily as courses for juniors; prerequisites are normally required, and these courses are prerequisites for advanced courses Advanced level (senior year) Designed primarily for juniors and seniors; also includes specialized courses such as research, capstone, and thesis

GRADUATE

0001–0999	Orientation and basic No degree credit
5000–5999	First-level graduate Courses primarily for graduate students and qualified undergraduate students with permission
6000–6999	Second-level graduate Generally for master's and clinical doctorate only
7000–7999	Third-level graduate Master's- and doctoral-level courses; includes master's thesis
8000–8999	Clinical/research/readings Includes comprehensive exam preparation
9000–9999	Doctoral research and dissertation

Maintenance of Student Records

The university registrar is responsible for ensuring appropriate maintenance and safekeeping of student records. The transcript, which is stored electronically and maintained indefinitely, is the holistic record of student attendance and degree progress. In the event that the university discontinues operations, the archive of student records would be maintained by:

Massachusetts Department of Higher Education
One Ashburton Place
Room 1401
Boston, MA 02108

Course Cancellations

Northeastern University reserves the right to cancel any course if minimum enrollments, appropriate faculty, or academic facilities do not meet standards.

Final Examinations and Related Policies on Other Exams

All final examinations, term papers, or projects must be returned to the student or be retained by the department for a period of one year.

Graduation Requirements

All eligible degree candidates must complete the graduation application by the applicable deadline. Before you apply to graduate through your myNEU account, we recommend you take the time to review your current program information, i.e., degree, major, and concentration. To review this information, log in to your myNEU account; under the "Self-Service" tab click "Student Self-Service."

Family Educational Rights and Privacy Act (FERPA)

FERPA for Students—General Information

FERPA is a federal law that applies to educational institutions. Under FERPA, schools must allow students who are 18 years or over or attending a postsecondary institution:

- Access to their education records
- An opportunity to seek to have the records amended (see the *Student Handbook* for this procedure)
- Some control over the disclosure of information from the records

FERPA General Guidance for Parental Disclosure

When a student turns 18 years of age or attends a postsecondary institution, the student, and not the parent, may access, seek to amend, and consent to disclosures of his or her education records.

If you are an undergraduate day student and you choose not to share information with your parents, Northeastern will, if asked, indicate that you have restricted access to your records.

Release of Directory Information

The primary purpose of directory information is to allow Northeastern University to confirm attendance for employers, health insurance companies, and loan agencies. Northeastern may disclose appropriately designated "directory information" without written consent, unless you have advised the university to the contrary in accordance with the procedures below. If you choose not to release directory information, all communications with all third parties and agencies will need to be done through your written request to the university or in person.

As of June 30, 2016, Northeastern directory information includes:

- Student name
- Home address (city, state, country only)
- Major field of study
- College
- Class year
- Enrollment status (e.g., undergraduate or graduate, full-time or part-time)
- Dates of attendance
- Degrees, honors, and awards received
- Most recent educational agency or institution attended

- Sports activity participation, showing weight/height of members of athletic teams
- Participation in officially recognized activities

If Northeastern currently has permission to release data and you do not want the university to disclose directory information without your prior written consent, you must notify the university by coming to the Office of the Registrar, 271 Huntington Avenue.

Notification of Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. These rights are:

1. The right to inspect and review the student's education records within 45 days of the day the university receives a request for access. Students should submit to the registrar, dean, or head of the academic department (or appropriate official) written requests that identify the record(s) they wish to inspect. The university official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the university official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.
2. The right to request the amendment of the student's education record that the student believes is inaccurate or misleading. Students may ask the university to amend a record that they believe is inaccurate or misleading. They should write the university official responsible for the record, clearly identify the part of the record they want changed, and specify why it is inaccurate or misleading. If the university decides not to amend the record as requested by the student, the university will notify the student of the decision and advise the student of his or her right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.
3. The right to consent to disclosures of personally identifiable information contained in the student's education records, except to the extent that FERPA authorizes disclosure without consent. One exception, which permits disclosure without consent, is disclosure to school officials with legitimate educational interest. A school official is defined as a person employed by the university in an administrative, supervisory, academic, or support staff position (including law enforcement unit and health staff); a person or company with whom the university has contracted (such as an attorney, auditor, or collection agent); a person serving on the Board of Trustees; or a person assisting another school official in performing his or her tasks. A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibility.
4. The right to file a complaint with the U.S. Department of Education concerning alleged failures by the university to comply with the requirements of FERPA. At Northeastern, the Office of the University Registrar, 271 Huntington Avenue, administers FERPA.

Additional Information

Additional information can be obtained at the U.S. Department of Education's website (<http://www.ed.gov/policy/gen/guid/fpco/ferpa>) or by writing to:

Family Policy Compliance Office
U.S. Department of Education
400 Maryland Avenue, SW
Washington, D.C. 20202-5920

Student Right-to-Know Act

For information about the Student Right-to-Know Act, visit the registrar's website. (<http://www.northeastern.edu/registrar/right-to-know.html>)

Code of Student Conduct

The Code of Student Conduct is online at the Office of Student Conduct and Conflict Resolution (<http://www.northeastern.edu/osccr/code-of-student-conduct>) website.

Appeals Policies and Procedures

Graduate Student Appeals Procedures

Northeastern University affirms that it is essential to provide an appeals mechanism to students who believe that they have been erroneously, capriciously, inappropriately, or otherwise unfairly treated.

Academic Appeals

It is the policy of the university that all students shall be treated fairly with respect to evaluations made of their academic performance, standing, and progress. The university presumes that academic judgments by its faculty are fair, consistent, and objective. Students must understand that the substitution of a different academic judgment for that of the original evaluator is a serious intrusion upon teaching prerogatives. Nonetheless, the university believes it is essential to provide an appeals mechanism to students who believe that they were erroneously, capriciously, or otherwise unfairly treated in an academic or cooperative education determination. This includes claims of misinterpretation or inequitable application of any academic provision of the student handbook or *Faculty Handbook*. Issues concerning admission or readmission into a program cannot be appealed beyond the college level.

Before invoking the appeals procedures, students are always encouraged to speak informally to their instructors or academic advisors about any determination or grade about which they have questions. If students choose to pursue an appeal, the process is described in the appeals section that follows.

Scientific or Research Misconduct

Scientific or research misconduct is defined as fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the academic and scientific community for proposing, conducting, or reporting research and does not include honest error or honest differences in interpretation or judgments of data. (Further information can be obtained from the U.S. Office of Research Integrity, Department of Health and Human Services. (<https://ori.hhs.gov>) Possible incidences of misconduct are to be reported immediately to the vice provost for graduate education, who will initiate the appropriate procedures. Findings of scientific or research misconduct cannot be appealed through the process below.

Nonacademic Appeals

It is the policy of the university that all students shall be treated with respect and that all evaluations of their employment performance will be fair, consistent, and objective. This includes claims of misinterpretation or inequitable application of any employment provision of the student handbook. The student is always encouraged to speak informally to his or her supervisor about any determination about which he or she has questions prior to invoking the appeals procedures.

If the student chooses to pursue an appeal, the process is described in the appeals section that follows.

Appeal of Final Grades

It is the policy of the university that all students will be treated fairly in evaluations made of their academic performance, standing, and progress. The university presumes that academic judgments by its faculty are fair, consistent, and objective. Students must understand that the substitution of a different academic judgment for that of the original evaluator is a serious intrusion upon teaching prerogatives. Nonetheless, the university believes it is essential to provide an appeals mechanism to students who believe that they were erroneously, capriciously, or otherwise unfairly treated in an academic or cooperative education determination. This includes claims of misinterpretation or inequitable application of any academic provision of the university's undergraduate or graduate catalog, student handbook, or *Faculty Handbook*. However, graduate student issues involving admission or readmission in a program cannot be appealed beyond the college level.

In most cases, students should first discuss their concerns with the faculty member who taught the course to see if it is possible to reach agreement on the issue(s). If the student is not satisfied with the outcome of this discussion, or if the student is not comfortable discussing the issue with the instructor, the student should request a meeting with the department chair, or a person named by the chair, to attempt a department-level resolution of the appeal. If these informal attempts to resolve the issue fail, the student can enter the formal procedure at the college level as follows.

STEP 1

A student may appeal an academic determination by submitting a written statement (the Statement) that specifies the details of the action or judgment. This Statement should include when the problem occurred, who was involved, the basis of the appeal, and the resolution sought by the student. For students in the College of Professional Studies (CPS), the Statement is submitted to the school official designated by the Vice President for Professional and Continuing Studies. Graduate students (other than CPS) should submit the Statement to the graduate coordinator in the department (where one exists). If there is no department-level coordinator, the appeal should proceed to Step 2. All appeals of grades should be initiated and resolved before the student graduates. If a student wishes to dispute a grade in his or her final term, this must be done within forty-five calendar days of graduation. If the appeal concerns a cooperative education determination, it is submitted to the dean of the college in which the student is enrolled. The Statement must specify the details of the action or judgment and the basis for the appeal. All parties shall cooperate and act expeditiously in processing the appeal to completion.

Though students are always entitled to seek the advice of legal counsel, students may not be represented by a lawyer in the informal or formal academic appeal procedures. A student may consult with the Vice Provost for Graduate Education, Vice President for Professional and Continuing Studies (in the case of CPS students), or their designees at any point in this procedure for advice or assistance. The dean, vice president, or provost may take whatever steps they deem reasonably appropriate to achieve voluntary resolution of the problem at any stage of these procedures.

The Statement should be submitted within twenty-eight working days (or twenty working days [four calendar weeks] for CPS students) of the day when the student learns of the academic determination in question. For course grade appeal in the CPS, the Statement must be submitted within twenty days after grades are posted to the student academic

record. Grades are typically available the Tuesday after the term ends and are viewable through the student's myNortheastern account.

If a student feels that he or she has been the victim of harassment or of discrimination prohibited by law or by university policy, he or she should consult with the Office of Institutional Diversity and Equity as soon as he or she becomes aware of alleged prohibited harassment or discrimination and is not required to wait until a term grade or determination is received before seeking advice or redress. If the Office of Institutional Diversity and Equity is advised of such alleged prohibited conduct as part of an academic appeal (see below), the appeal shall be pursued and investigated first through the Office of Institutional Diversity and Equity. In such cases, the student should submit the appeal to the appropriate dean(s) described in this step, with a copy also given to the Office of Institutional Diversity and Equity. Following a resolution of the sexual harassment/discrimination issues, any remaining academic issues will be addressed, at the request of the student, according to the academic appeals procedures.

STEP 2

The dean or CPS vice president shall respond to the student in writing, including specific instructions for the student to seek an informal resolution to the matter, unless such course of action, as outlined by the student in his or her Statement, is demonstrably futile. These directions shall include discussing the matter with the person whom the student identifies as involved in the matter. If the student is not satisfied with the informal resolution, the dean or CPS vice president shall discuss the matter with the department chair (where one exists), graduate coordinator, consultant, program director, or associate dean (as appropriate) or equivalent supervisor and the dean of the college in which the faculty member involved in the matter serves, who shall attempt to effect an informal resolution. The student shall also have the right to discuss the matter with the chair (where one exists) or equivalent supervisor in which department the faculty member involved in the matter serves.

If the appeal involves allegations of prohibited harassment or discrimination, the dean shall consult with the Office of Institutional Diversity and Equity before making this response and shall, as part of this response, explain the role that the Office of Institutional Diversity and Equity will play in steps 2 and 3 of this procedure.

A copy of this response shall be sent to the department chair or equivalent supervisor of the appropriate unit.

STEP 3

If the appeal cannot be resolved informally within thirty calendar days of the student's original submission of his or her Statement to the dean or CPS vice president, or if he or she is not satisfied with the disposition of the matter at Step 2, the student may proceed with the appeal through his or her college's or school's established academic appeals procedure. The dean or the academic standing committee, as applicable, must provide the student and the involved faculty member with a written report of the finding(s) and decision.

This step involves a review by an academic standing committee making the recommendation to the dean or CPS vice president. The student may obtain a copy of the operating rules of the academic standing committee from the dean of the college involved.

In appeals involving allegations of prohibited harassment or discrimination, the dean or academic standing committee shall receive a report of the findings of the investigation of the Office of Institutional Diversity and Equity for incorporation into its own report on matters left unresolved by that finding that were referred to it. The dean/CPS vice

president or committee shall be without authority to reverse or modify the Office of Institutional Diversity and Equity finding(s) or resolution.

STEP 4

If the student or the involved faculty member is not satisfied with the dean's or CPS vice president's disposition of the matter or if the appeal is not resolved within thirty calendar days after originally submitted to the dean or CPS vice president pursuant to step 1, he or she may further pursue the matter by requesting in writing within fourteen calendar days that the university convene an academic appeals resolution committee to review the issue. Students may obtain information on this process in either the Office of the Vice President for Student Affairs (104 EII) or the Office of the Provost (110 CH). This committee has been designated as the final authority on these matters. This request must be made within fourteen calendar days of the finding of the academic standing committee in step 3.

1. Academic Appeals Resolution Committee

The academic appeals resolution committee includes:

- The Vice Provost for Graduate Education or a designee.
- The student's faculty advisor will be appointed by the appropriate vice provost except in cases where no specific advisor exists, or where the faculty advisor is involved in the dispute. In those cases, a faculty member from the student's major college, department, or area of specialization will be appointed.
- Two faculty members appointed by the Faculty Senate Agenda Committee (if the appeal is based on a cooperative education determination, one of the faculty members shall be a member of the cooperative education faculty, but not from the student's area of study) and a representative of the Office of Institutional Diversity and Equity (if the appeal had at any point involved a matter of sexual harassment/discrimination).
- The chair shall be elected from among the committee's three faculty members but cannot be the student's faculty advisor.

2. Preliminary Matters

If the academic appeals resolution committee determines, by a majority vote, that the appeal is patently without substance or merit, it may dismiss the appeal.

3. Investigation

The academic appeals resolution committee shall investigate the matter under appeal as quickly as possible by studying the relevant documents, interviewing the parties (especially the student and the involved faculty member), and taking any other action it deems appropriate. At no time shall the committee be bound by rules of evidence but shall at all times conduct itself in a manner that is not arbitrary or capricious. The academic appeals resolution committee may, but is not required to, hold a hearing prior to resolving the issues. However, in all instances, the student and the involved faculty member shall have the right to appear and testify separately and privately before the academic appeals resolution committee. The student shall have the right to have an advocate from the university community present during his or her testimony to the academic appeals resolution committee.

4. Authority to Act

The academic appeals resolution committee has been designated as the final authority on these matters. At the conclusion of its investigation, the academic appeals resolution committee shall resolve, by majority vote, the issue by either upholding the finding of the academic standing committee or dean/CPS vice president, in

which case no further appeal is available, or granting such relief to the student as the appeals resolution committee deems appropriate.

- a. The academic appeals resolution committee may not determine a resolution that contradicts the prior findings or actions of the Office of Institutional Diversity and Equity with respect to elements of this appeal.
- b. In the event of a tie vote, the action of the academic standing committee or dean/CPS vice president shall be considered upheld.

5. **Resolution**

All direct parties to the appeal, including but not limited to the student, the CPS vice president or provost, the dean, the department chair or equivalent supervisors, graduate coordinator or equivalent supervisor, and the faculty member shall be promptly informed in writing of the decisions and actions taken (i.e., the Report) during this academic appeals procedure.

6. **Report**

A written Report of the appeal and its resolution shall be submitted by the chair of the academic appeals resolution committee to the student, the involved faculty member, the Faculty Senate Agenda Committee, the vice president for student affairs, the appropriate vice provost, the registrar, and the dean or CPS vice president, as appropriate.

7. **Action**

The dean(s) or CPS vice president or his or her designee in the involved college(s) shall take whatever action is necessary to implement fully the resolution of the academic appeals resolution committee. This includes reporting the change of grade to the registrar.

8. **Appeal**

No further appeal can be instituted by the student or the involved faculty member with respect to the issue(s) raised at any level of the formal appeals resolutions procedures once adjudicated.

4. If the grievance is not satisfactorily resolved, the student should complete a grievance form and file a written request for a formal hearing with the Grievance Committee for Disabled Students. The request should be filed with the vice president for student affairs. Upon receipt of a written request for a formal hearing, the grievance committee (including one faculty member from the student's college, one faculty member not from the student's college, one representative from the Disability Resource Center, a representative from the Office of Institutional Diversity and Equality, the vice president for student affairs or a designee, and another administrator not from student affairs) must hold a hearing within three calendar weeks. The grievance committee must allow a full and fair opportunity for the presentation of evidence relevant to the reason(s) for the hearing request and must render a decision in writing to the requesting student within one week of the conclusion of the hearing. The director of the Office of Institutional Diversity and Equality is compliance officer for Section 504 of the Rehabilitation Act of 1973.

GRIEVANCE PROCEDURE—SEXUAL HARASSMENT

No employee, agent, supervisory personnel, or faculty member shall exercise his or her responsibilities or authority in such manner as to make submission to "sexual advances, requests for sexual favors, or other verbal or physical conduct of a sexual nature" as an explicit or implicit term or condition of evaluation, employment, admission, advancement, or reward within the university. Neither shall any employee, agent, supervisory personnel, or faculty member make submission to or rejection of such conduct the basis for employment or academic decisions affecting any employee or student. Neither shall any employee, agent, supervisory personnel, or faculty member conduct himself or herself with respect to verbal or physical behavior of a sexual nature where such conduct has the purpose or effect of unreasonably interfering with an individual's work or academic performance or creating an intimidating, hostile, or offensive work or classroom environment.

Though sexual harassment will not be tolerated, the university recognizes that it is difficult to regulate emotional relationships between consenting adults. However, a consensual relationship may be suspect in instances in which one of the individuals has authority over the other. Therefore, no faculty or employee involved romantically or sexually with a student may teach or supervise that person either individually or as part of a group in any activity connected to the university.

Any student, teaching assistant, employee, or faculty member who feels that he or she has been the victim of sexual harassment may bring the matter to the attention of the director of the Office of Institutional Diversity and Equality. Copies of the sexual harassment grievance procedure can be obtained from the Office of Institutional Diversity and Equality, 424 Columbus Place.

HAZING—CHAPTER 269 OF THE MASSACHUSETTS GENERAL LAWS

Section 17. Whoever is a principal organizer or participant in the crime of hazing, as defined herein, shall be punished by a fine of not more than three thousand dollars or by imprisonment in a house of correction for not more than one year, or both such fine and imprisonment. The term hazing as used in this section and in sections eighteen and nineteen, shall mean any conduct or method of initiation into any student organization, whether on public or private property, which willfully or recklessly endangers the physical or mental health of any student or other person. Such conduct shall include whipping; beating; branding; forced calisthenics; exposure to weather; forced consumption of any food, liquor, beverage, drug, or other substance; or any other brutal treatment or forced physical activity which is likely to adversely affect the physical health or safety of any such student or other person, or

General Regulations

Review the general regulations that follow as well as all other regulations or limitations included throughout this catalog. Your success at Northeastern depends, in part, on understanding your rights and fulfilling your responsibilities.

Legal Rights and Responsibilities

GRIEVANCE PROCEDURE FOR DISABLED STUDENTS

It is the policy of Northeastern University to comply with all laws governing access by and discrimination against disabled students. Accordingly, any student who believes that there has been a violation of these laws is encouraged to discuss the matter with the director of the Disability Resource Center and other persons identified by the director, or with the director of the Office of Institutional Diversity and Equality, to resolve the matter in a prompt and equitable manner. If such discussions do not resolve the matter, the student may then initiate a grievance by taking the steps outlined below.

1. All grievances made by students on the basis of being disabled are considered as being made to the president of the university.
2. In the case of a grievance, the student should discuss the objection with the individual responsible for the office or department where the objection was initially raised.
3. If not satisfied, the student should discuss the objection with the dean of the college or director under which the department falls.

which subjects such student or other person to extreme mental stress, including extended deprivation of sleep or rest or extended isolation. Notwithstanding any other provisions of this section to the contrary, consent shall not be available as a defense to any prosecution under this action.

Section 18. Whoever knows that another person is the victim of hazing as defined in section seventeen and is at the scene of such crime shall, to the extent that such person can do so without danger or peril to himself or others, report such crime to an appropriate law enforcement official as soon as reasonably practicable. Whoever fails to report such crime shall be punished by a fine of not more than one thousand dollars.

Section 19. Each institution of secondary education and each public and private institution of postsecondary education shall issue to every student group, student team, or student organization that is part of such institution or is recognized by the institution or permitted by the institution to use its name and facilities or is known by the institution to exist as an unaffiliated student group, student team, or student organization, a copy of this section and sections seventeen and eighteen; provided, however, that an institution's compliance with the section's requirements that an institution issue copies of this section and sections seventeen and eighteen to unaffiliated student groups, teams, or organizations shall not constitute evidence of the institution's recognition or endorsement of said unaffiliated student groups, teams, or organizations.

Each such group, team, or organization shall distribute a copy of this section and sections seventeen and eighteen to each of its members, plebes, pledges, or applicants for membership. It shall be the duty of each such group, team, or organization, acting through its designated officer, to deliver annually to the institution an attested acknowledgement stating that such group, team, or organization has received a copy of this section and said sections seventeen and eighteen, that each of its members, plebes, pledges, or applicants has received a copy of sections seventeen and eighteen, and that such group, team, or organization understands and agrees to comply with the provisions of this section and sections seventeen and eighteen. Each institution of secondary education and each public or private institution of postsecondary education shall, at least annually, before or at the start of enrollment, deliver to each person who enrolls as a full-time student in such institution a copy of this section and sections seventeen and eighteen.

Each institution of secondary education and each public or private institution of postsecondary education shall file, at least annually, a report with the regents of higher education and, in the case of secondary institutions, the board of education, certifying that such institution has complied with its responsibility to inform student groups, teams, or organizations and to notify each full-time student enrolled by it of the provisions of this section and sections seventeen and eighteen and also certifying that said institution has adopted a disciplinary policy with regard to the organizers and participants of hazing and that such policy has been set forth with appropriate emphasis in the student handbook or similar means of communicating the institution's policies to its students. The board of regents and, in the case of secondary institutions, the board of education shall promulgate regulations governing the content and frequency of such reports and shall forthwith report to the attorney general any such institution that fails to make such report.

STUDENT RIGHT-TO-KNOW AND CAMPUS SECURITY ACT

In compliance with the Student Right-to-Know and Campus Security Act, information regarding graduation rates may be obtained in the Office of the Registrar, 271 Huntington Avenue, and in the Department of Athletics, 219 Cabot Physical Education Center; information regarding safety and security may be obtained in the Office of Admissions and the Public Safety Division, 100 Columbus Place. It is Northeastern University's policy to disclose to an alleged victim of any crime of violence the results of any disciplinary proceeding against the alleged perpetrator of such crime. Further information is available in the Office of Student Conduct and Conflict Resolution, 202 Ell Hall.

USE OF ALCOHOL AND DRUGS

The unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in or on any Northeastern property. Any university employee or student determined to have violated this policy may be subject to disciplinary action up to and including dismissal. The use of alcohol while on Northeastern property is prohibited except where specifically authorized by the university. No employee may report to work while under the influence of alcohol or illegal drugs. Violation of these regulations may be reason to require evaluation/treatment for substance abuse in coordination with the University Center for Counseling and Student Development and/or for disciplinary action up to and including dismissal. Northeastern University works to provide a drug-free workplace for all university employees and students. The Center for Counseling and Student Development provides resources for treatment and referral for students and employees with substance abuse problems. Educational programs for students, employees, and managers are presented through Human Resources Management, the Office of Residential Life, and the Center for Counseling and Student Development and cover the dangers of alcohol and drug abuse, the availability of assistance for counseling and rehabilitation, and penalties for violating university policies. To comply with federal law, the university requires that employees directly engaged in performance of a grant or contract must notify their employers of any criminal drug statute conviction for a violation occurring in the workplace no later than five days after the conviction. The university must notify any federal contracting agency within ten days of having received notice that an employee engaged in the performance of such contract has had a criminal drug statute conviction for a violation occurring in the workplace. The university will take appropriate action up to and including dismissal and/or require participation in an approved abuse assistance or rehabilitation program.

USE OF WEAPONS

The use or possession on campus of firearms, explosive agents of any kind, as well as chemicals, mace, and tear gas, is specifically forbidden by the Code of Student Conduct. Violation of this university policy is cause for disciplinary action up to and including expulsion. In addition, it is worth noting that Massachusetts law states: "Whoever, not being a law enforcement officer and notwithstanding any license obtained by him under the provisions of chapter one hundred and forty, carries on his person a firearm as hereinafter defined, loaded or unloaded, in any building or on the grounds of any college or university without the written authorization of the board or officer in charge of said college or university shall be punished by a fine of not more than one thousand dollars or by imprisonment for not more than one year or both. For the purpose of this paragraph, 'firearm' shall mean any pistol, revolver, rifle, or smoothbore arm from which a shot, bullet, or pellet can be discharged by whatever means."

Massachusetts general law prohibits the possession of nunchaku or karate sticks; switchblades; knives; starter's pistols; ammunition; leather armbands or other clothing that has metallic spikes, points, or studs; or other dangerous weapons or articles. A student who possesses any

articles for sporting purposes (for example, bow and arrows) should check with the University Police Department or the Department of Residential Life to determine whether such articles are among those prohibited by statute or university regulation. Northeastern University also prohibits the possession of knives other than food utensils.

Policies and Procedures

ACADEMIC INTEGRITY POLICY

Essential to the mission of Northeastern University is the commitment to the principles of intellectual honesty and integrity. Academic integrity is important for two reasons. First, independent and original scholarship ensures that students derive the most from their educational experience and the pursuit of knowledge. Second, academic dishonesty violates the most fundamental values of an intellectual community and depreciates the achievements of the entire university community.

Accordingly, Northeastern University views academic dishonesty as one of the most serious offenses that a student can commit while in college. The following is a broad overview of what constitutes academic dishonesty but is not meant to be an all-encompassing definition.

Cheating

Defined as intentionally using or attempting to use unauthorized materials, information, or study aids in any academic exercise. Examples:

- Unauthorized use of notes, text, or other aids during an examination
- Copying from another student's examination, research paper, case write-up, lab report, homework, computer disc, and so on
- Talking during an examination
- Handing in the same paper for more than one course without the explicit permission of the instructor
- Perusing a test before it is given
- Hiding notes in a calculator for use during an examination

Fabrication

Defined as intentional and unauthorized falsification, misrepresentation, or invention of any information, data, or citation in an academic exercise. Examples:

- Making up the data for a research paper
- Altering the results of a lab experiment or survey
- Listing a citation for a source not used
- Stating an opinion as a scientifically proven fact

Plagiarism

Defined as intentionally or knowingly representing the words or ideas of another as one's own in any academic exercise without providing proper documentation of source by way of a footnote, endnote, or intertextual note. The following sources demand notation:

- Word-for-word quotation from a source, including another student's work
- Paraphrase: using the ideas of others in your own words
- Unusual or controversial facts—facts not apt to be found in many places
- Interviews, radio and television programs, and telephone conversations

Unauthorized Collaboration

This refers to instances when students, each claiming sole authorship, submit separate reports that are substantially similar to one another. While several students may have the same source material (as in case

write-ups), the analysis, interpretation, and reporting of the data must be each individual's.

Participation in Academically Dishonest Activities

Examples:

- Stealing an examination
- Purchasing a prewritten paper through a mail-order or other service, including via the internet
- Selling, loaning, or otherwise distributing materials for the purpose of cheating, plagiarism, or other academically dishonest acts
- Alteration, theft, forgery, or destruction of the academic work of other students, library materials, laboratory materials, or academic records including transcripts, course registration cards, course syllabi, and examination/course grades
- Intentionally missing an examination or assignment deadline to gain an unfair advantage

Facilitating Academic Dishonesty

Defined as intentionally or knowingly helping or attempting to violate any provision of this policy. Examples:

- Inaccurately listing someone as coauthor of a paper, case write-up, or project who did not contribute
- Sharing with another student a take-home examination, homework assignment, case write-up, lab report, and so on, without expressed permission from the instructor
- Taking an examination or writing a paper for another student

All members of the Northeastern University community—students, faculty, and staff—share the responsibility to bring forward known acts of apparent academic dishonesty. Any member of the academic community who witnesses an act of academic dishonesty should report it to the appropriate faculty member or to the director of the Office of Student Conduct and Conflict Resolution. The charge will be investigated and if sufficient evidence is presented, the case will be referred to the Northeastern University Student Judicial Hearing Board. If found responsible for an academic dishonesty violation, a minimum sanction of deferred suspension will follow. If found responsible for a second violation, the student will be expelled from the university.

APPROPRIATE USE OF COMPUTER AND NETWORK RESOURCES POLICY

The information systems of Northeastern University are intended for the use of authorized members of the Northeastern community in the conduct of their academic and administrative work. To protect the integrity of computer resources against unauthorized or improper use, and to protect authorized users from the effects of unauthorized or improper usage, the university reserves the right, with or without notice, to monitor, record, limit, or restrict any account holder's usage. The university may also monitor, record, inspect, copy, remove, or otherwise alter any data, file, or system resources. The university reserves the right to periodically check these systems and to take any other action necessary to protect the computer and network facilities. The university also retains access rights to all files and electronic mail on its computing and network facilities. Anyone using these systems or networks expressly consents to such monitoring.

Any unauthorized, inappropriate, illegal, or illegitimate use of the university's computing resources, or failure to comply with these guidelines, shall constitute a violation of university policy and will subject the violator to disciplinary action by the university and may result in legal action. When a violation is identified, the appropriate system manager or unit head will undertake a review and initiate action in accordance with university policy. In addition, the university may require restitution for

any use of computer or network services that violate these guidelines. The university may also provide evidence of possible illegal or criminal activity to law enforcement authorities.

Notwithstanding any other provision of this policy, authorization to access the information systems of Northeastern University ends at the termination of employment, the end of a recognized role or relationship, or the loss of sponsorship. Students may continue to use their Northeastern electronic mail account for up to six months after graduation. Any questions about this policy or the applicability of this policy to a particular situation should be referred to the information technology security manager or the director of internal audit. The university's information systems consist of all networking wiring, equipment, networks, security devices, servers, computer systems, computers, computer laboratory equipment, workstations, internet connections, and all other intermediary equipment, services, and facilities. These assets are the property of Northeastern University.

1. Access to and use of Northeastern information systems is a privilege granted by the university to its faculty, staff, and students. Access for up to one academic year for others, including "sponsored" individuals whose relationship with Northeastern is a result of a university-recognized affiliation or relationship, must be approved by the authorizing unit's dean or vice president. Such access may not be renewed without the written approval of the senior vice president for administration and finance.
The university retains sole discretion over the extent to which access privileges are granted.
2. Users may only use those computer accounts that have been authorized by the university for their use. Use of another person's account, security devices, and/or the presentation of false or misleading information or credentials for the purpose of obtaining access to information systems is prohibited.
3. Users are responsible for all use of information systems conducted under their user ID(s) and are expected to take all precautions including password security and file protection measures to prevent use of their accounts and files by unauthorized persons. Sharing of passwords is prohibited.
4. Users may not offer, provide, lend, rent, or sell access to university information systems. Users may not provide access to individuals outside the university community.
5. Use of university information systems for hosting nonuniversity activities must have the explicit written authorization of the senior vice president for administration and finance prior to the use.
6. While the university attempts to protect electronic communication and files from unauthorized access, this cannot be guaranteed. Users may not access, copy, or move files including, but not limited to, programs, data, and electronic mail that belong to another account without prior authorization from the account holder. Files may not be moved to other computer sites without permission from the holder of the account under which the files reside.
7. Users may not use remote resources such as printer and file systems, regardless of location on or off the Northeastern network, unless the administrator of the remote resource has first granted permission.
8. Northeastern information systems may be used for lawful purposes only. Users must not use their accounts or Northeastern information systems for unlawful purposes including, but not limited to, the installation of fraudulently or illegally obtained software; illegal dissemination of licensed software; sharing of content where the disseminator does not hold lawful intellectual property rights; propagating chain letters, pyramid, Ponzi, other unlawful or deceptive schemes; or for any purpose contrary to local, state, and/or federal law.
9. Use of university information systems must comply with the provisions of copyright law and fair use. Copyright law limits the right of a user to copy, edit, or transmit electronically another's intellectual property, including written materials, images, sounds, music, and performances, even in an educational context, without permission, except in compliance with the fair use doctrine exception.
10. Users are responsible for the timeliness, accuracy, and content/consequences of their web pages. Posting of personal, family, or other identifying information is at the sole discretion of the user. Users are advised to exercise discretion when posting personal information to minimize the risk to personal privacy and safety.
11. University information systems may not be used for commercial purposes, except only as permitted with explicit prior written approval of university counsel and the senior vice president for administration and finance.
12. Internet use must comply with the terms of service stipulated by our internet service provider(s). These policies are incorporated by reference. In addition, the acceptable use, terms of service, and/or other policies of the system(s) also bind users of the internet connection and resources to which they connect. At the time of writing, the internet service provider for Northeastern University is Genuity (<http://www.genuity.com>).
13. Users may not use information systems irresponsibly, wastefully, or in a manner that adversely affects the work or equipment of others at Northeastern or on the internet.
14. The university strives to maintain the security and privacy of all electronic communications and content passed on the Northeastern network and, therefore, will not arbitrarily or frivolously review or inspect user files or electronic mail. However, all electronic communications and content presented to and/or passed on the Northeastern network, including that presented to and/or passed to and from the internet connection(s), may be monitored, examined, saved, read, transcribed, stored, or retransmitted in the course of daily operations by any duly authorized employee or agent of Northeastern University in the exercise of their duties or by law enforcement authorities who are called upon to assist the university in investigating possible wrongdoing. Electronic communications and content may be examined by automated means. Further, Northeastern reserves the right to reject from the network electronic communications and content deemed not in compliance with policies governing the use of information systems at the university. By accessing Northeastern information systems, users give Northeastern permission to conduct each of the operations described above.
15. The confidentiality of any message or material should not be assumed. Even when a message or material is deleted, it may still be possible to retrieve and read that message or material. Further, the use of passwords for security does not guarantee confidentiality. Messages read in HTML may identify the reader to the sender. Aside from the right of the university to retrieve and read any electronic communications or content, such messages or materials should be treated as confidential by other students or employees and accessed only by the intended recipient. Without prior authorization, students and employees are not permitted to retrieve or read electronic mail messages that are not sent to them.
16. All users are required to honor and observe the rules of confidentiality and protection of privacy when accessing and using any information that resides on Northeastern information systems and/or any information that pertains to university programs, students, faculty, and staff. All disclosures of student information must comply with

the provisions of the Family Educational Rights and Privacy Act (FERPA) of 1974.

17. Northeastern reserves the right at any time, without prior notice or permission from the user or users of a computer or other Northeastern-owned computing device, to copy or have copied any and all information from the data-storage mechanisms of such devices, as may be required at the sole discretion of the university, in connection with investigations of possible wrongdoing.
18. The Appropriate Use of Computer and Network Resources Policy specifically prohibits the use of Northeastern University's information systems to:
 - Harass, threaten, defame, slander, or intimidate any individual or group.
 - Generate and/or spread intolerant or hateful material, which in the sole judgment of the university is directed against any individual or group, based on race, religion, national origin, ethnicity, age, gender, marital status, sexual orientation, veteran status, or disability.
 - Transmit or make accessible material, which in the sole judgment of the university is offensive, violent, pornographic, annoying, or harassing, including use of Northeastern information systems to access and/or distribute obscene or sexually explicit material unrelated to university-sanctioned work or bona fide scholarship.
 - Generate unsolicited electronic mail such as chain letters, unsolicited job applications, or commercial announcements.
 - Generate falsely identified messages or message content, including use of forged content of any description.
 - Transmit or make accessible password information.
 - Attempt to access and/or access information systems and/or resources for which authority has not been granted by the system owner(s).
 - Capture, decipher, or record user IDs and/or passwords.
 - Intercept electronic communications not intended for the recipient.
 - Probe, by any means, the security mechanisms of any resource on the Northeastern network or on any other network through a connection to the Northeastern network.
 - Disclose or publish, by any means, the security vulnerabilities of or the means to defeat or disable the security mechanisms of any resource connected to or part of the Northeastern University network.
 - Alter, degrade, damage, or destroy data.
 - Transmit computer viruses or malicious/destructive code of any description.
 - Conduct illegal, deceptive, or fraudulent activity.
 - Obtain, use, or retransmit copyrighted information without permission of the copyright holder.
 - Place bets, wagers, or operate games of chance.
 - Tax, overload, impede, interfere with, damage, or degrade the normal functionality, performance, or integrity of any device, service, or function of Northeastern information systems, content, components, or the resources of any other electronic system, network, service, or property of another party, corporation, institution, or organization.
 - The above enumeration is not all-inclusive. If there is a question as to whether a specific use is appropriate or acceptable under this policy, the university's sole determination shall prevail.
19. Use of Northeastern University information systems must comply with all applicable local, state, and federal laws, including, but not limited to, the following, which are incorporated by reference:

- Massachusetts General Laws Chapter 266, Subsections 33(a) and 120(f), which impose sanctions for, among other acts, destroying electronically processed and stored data or gaining unauthorized access to a database or computer system.
- United States Code, Title 18, Computer Fraud and Abuse Act, which imposes sanctions for, among other acts, knowingly accessing a computer without authorization or in excess of authorized access, knowingly causing damage to protected computers, or trafficking in password information.
- United States Code, Title 18, Electronic Communications Privacy Act, which imposes sanctions for, among other acts, interception of wire, oral, or electronic communications.

BEHAVIOR ON CO-OP, ON EXTERNSHIPS, AND IN THE NEIGHBORHOOD

As an urban institution, Northeastern University is a part of the vibrant community and business life of the surrounding neighborhoods. Maintaining amicable and considerate relations between the university and local residents and businesses is essential to the continued cooperation of the university and its neighbors in civic projects and issues and to the furtherance of the university's broader mission to contribute to the general good of society. The university endeavors to foster conditions under which such beneficial relations exist. Consequently, the university must consider conduct on the part of members of the university community, whether on or off campus and whether isolated or continuing in nature, that is disruptive of these relations; that impairs, interferes with, or obstructs the lawful missions, processes, and functions of the university; or that is found by the university to be abhorrent or offensive to generally accepted standards of social behavior, as inimical to the university's interests.

The university's Code of Student Conduct governs student behavior on co-op, externships, and in the community surrounding the university. In addition, misbehavior in these settings may violate the law, policies of the co-op employer, or rules of the externship sponsor.

BICYCLES

Wherever possible, students should use the bike racks available at various locations on campus. Bicycles should not be chained to fences, doors, trees, or other objects, and under no circumstances may bicycles be brought into any university building. The fire code dictates that all entrances, exits, corridors, and stairwells must be free and clear at all times. Bicycles found in violation of this code will be removed from the area.

CARD PLAYING AND GAMBLING

The university does not permit card playing of any kind in classrooms unless it is a regularly scheduled activity of an organization recognized officially by the Office of Student Activities. Social card games are permitted in the residence halls and in the Curry Student Center. Students may not gamble, play pyramid games, or sell lottery tickets. Casino or other game events are permitted in designated areas that are approved by city and state laws, as part of properly scheduled events, and in strict accordance with regulations issued by the Office of the Vice President for Student Affairs.

COPYRIGHTABLE MATERIALS

It is the general policy of the university that student papers or projects submitted in partial fulfillment of course requirements remain the property of the student authors.

This policy does not apply to:

1. "Work for hire" as defined by intellectual property laws
2. Work derived wholly or in part from other patented or copyrighted material

3. Work done as part of external grants or contracts in which the contracting documents or regulations define ownership
4. Work in which the university or its agents or employees contribute substantial time or resources
5. Work considered a thesis or dissertation

The university owns the copyright to any work created or developed by one or more students with the significant use of funds, space, facilities, equipment, materials, or other university resources. The university will not normally construe the payment of salary from unrestricted funds or the provision of office and library facilities as constituting significant use of funds, space, facilities, equipment, materials, or other resources of or administered by the university. Use of laboratory and/or computer facilities or assistance from one or more faculty or staff members to a student author specifically pertaining to the work constitutes significant use of university resources. In all cases, the provost or his or her designee shall make a good-faith determination concerning significant use, which shall be final and binding on all parties.

In the case of a thesis generated by research performed in whole or in part by a student in the course of or pursuant to an agreement for sponsored research or other written agreement, including an agreement between the author(s) and the university, or utilizing equipment or facilities provided to the university under conditions that impose copyright restrictions, ownership or control shall be determined in accordance with such agreement or restrictions. In the absence of such agreement or restrictions, copyright ownership in such a thesis shall reside in the student. However, the student, as a condition of a degree award, must grant the university the royalty-free right to reproduce and publicly distribute copies of the thesis for limited and noncommercial purposes.

Where necessary to secure to the university an ownership of copyright, students shall assign such rights of copyright, or grant the specified rights of reproduction and distribution, to the university. The university reserves the right to employ, at its discretion, the materials or portions of any work created or developed in the course of an author's relationship with the university, or otherwise covered by the University Patent and Copyright Policy, for promotional, professional, or noncommercial purposes on a royalty-free basis. Certain courses taught at Northeastern University involve students in individual or group assignments or projects involving the creation of materials, objects, or techniques that may be patentable or copyrightable. These courses generally require extraordinary levels of faculty organization and participation and/or substantial university resources.

1. Individual teachers or academic units may require that originals or copies of such papers or projects be retained either temporarily or permanently by the individual teacher or by the unit.
2. A thesis is a student work representing significant original or independent research and for which the student receives a substantial amount of credit toward a degree or certificate. Where there is a question concerning whether or not a student's work is a thesis, the provost or his or her designee shall make a good-faith determination concerning same, which shall be final and binding on all parties.
3. Copies of the university patent and copyright policies are available from the Division of Research Development, 405 Lake Hall, 617.373.4587.

In accordance with university patent and copyright policies, in such courses the university is the owner of all rights in technology, computer programs, or other creative work that may be developed by the undergraduate or graduate student as part of the student's work in those

courses. It is the university's intention, where applicable, to disclose and authorize the use of such technology, programs, or work to nonprofit organizations and to government agencies without a fee. The university may also have the opportunity to license such materials to a commercial enterprise, and in this event, it is the university's intention to share any revenue from such a license with student contributors in an amount determined in accordance with the then-existing university policy or plan. Students are informed early in the semester if the course in which they are enrolled falls within this category and will be asked to sign a letter of agreement. Should the student decline to sign an agreement, he or she will be assigned to another course section—one in which such agreement is not required—or will be given alternative activities not involving such assignments or projects.

COPYRIGHTS AND PATENTS

Any student who makes, as sole or joint inventor, an invention that involved significant use of university resources, including funds, space, facilities, equipment, or materials, or that is subject to terms of a sponsored research or other agreement between the university and another party, shall assign this invention and all associated applications and patents to the university or its designee unless the invention has been released to the inventor in accordance with the applicable provisions of the university patent policy. Any student, whether before or after terminating his or her association with the university, shall do whatever is necessary to enable the university or its designee to take out patents in any and all countries on such invention. The cost and expense of making such assignments and procuring such patents shall be borne by the university or its designee. When an invention is made by a student not involving significant use of funds, space, facilities, equipment, materials, or other resources of or administered by the university, the university will waive its rights, and the invention will be the exclusive property of the student, provided the student's rights in the invention are not altered by the terms of any financial aid received, including external sponsorship, scholarships, fellowships, traineeships, thesis expenses, or other assistance, whether or not administered by the university and provided the invention is not subject to third-party rights.

DEMONSTRATIONS

The university supports as fundamental to the democratic process the rights of all members of the university community to express their views and to protest actions or opinions with which there is disagreement. A university is where individuals express diverse ideas and viewpoints in an atmosphere free of any physical force. The university insists that all demonstrations be peaceful and orderly and abide by university regulations.

- Demonstrators must not block corridors or entrances or use loud noise to disrupt a conference, meeting, or assembly.
- Demonstrations may not be conducted in faculty or administrative offices, classrooms, libraries, or study areas.
- Moving picket lines in university corridors are prohibited. (Protests may be registered by individuals or groups standing in a single line against a corridor wall, but corridors must be kept open at all times for the free passage of other members of the community.)

Students, faculty, or other members of the university community who violate these regulations will be subject to disciplinary action; violators also jeopardize their right to remain in the university community.

DEPARTMENTAL JURISDICTION

Certain departments of the university shall have the power to set down rules and regulations governing the operation of the departments' respective areas of responsibility. Such rules and regulations shall be in accord with the "General Statement of Student Rights and

Responsibilities” as well as with the policies pertaining to student conduct as defined in this document.

DISMISSAL FROM CLASS

Students dismissed from classes for insubordination or other disciplinary reasons may not return without the approval of the college and the vice president for student affairs.

IDENTIFICATION CARDS

All students must have in their possession at all times the officially approved and properly validated photo identification card. It will be necessary to show this card as a means of identification when using the library and campus recreational facilities, at athletic contests, at student elections, at University Health and Counseling Services, at Student Accounts, at the Office of the Registrar, to campus police, and elsewhere around the university. All members of the community should be prepared and willing to identify themselves and their guests upon request by authorized personnel. An official photo identification card will be issued to new students during their initial orientation and registration periods. Replacements for lost cards can be obtained at the Office of the Registrar, 271 Huntington Avenue.

JURY DUTY

Northeastern expects students to fulfill their civic duties; the university cannot interfere in this process. Students who miss classes because of this obligation must notify their professors in writing, explaining which classes will be missed on which days. The professors will work with students to make up missed assignments or exams. Upon completion of their jury duty, students must bring a copy of the documentation of their service to the appropriate professors. Students on co-op are expected to inform their supervisors if called to jury duty.

MEDIA AND PUBLIC APPEARANCES

In all personal communications to newspapers or other media, as well as personal public appearances in which students identify themselves as members of the Northeastern University community, it should be made clear that the opinions presented are a student’s own and not necessarily those of the university. Students who appear on public programs as representatives of Northeastern University must be particularly careful to avoid language or presentations that could be considered in bad taste or offensive.

PETS

Pets are prohibited in all university buildings out of consideration for the general community and to maintain a clean and healthy environment. Exceptions are made for guide dogs and other guide animals.

PUBLIC ACCESS

Access by the general public to attend special programs or functions is limited to those events approved for such attendance. The facilities of the university were designed for the use of members of this academic community. When appropriate, access may be permitted for events and programs when it is apparent that the students, faculty, staff, and alumni of the university and their guests will not fill the facility reserved for such use. In such cases, special provisions must be made to ensure that members of this academic community have priority to attend and are not precluded from attendance by the general public. Certain facilities, such as residence halls, classrooms, and laboratories, are designed for and are to be used by residence hall residents only, or in the case of classrooms and laboratories, by members of this academic community. In all cases, the essential educational purpose of the university cannot be interrupted or disturbed by the access of the general public. Officials of the university may restrict or prevent access by the public if such access disturbs or has the potential to disturb classes or other functions of Northeastern University. Occasionally, access to an area such as the Krentzman Quad will be granted to distribute free literature or provide a public forum for

speakers. Such use requires the prior approval of the director of student activities and will be granted only during the Wednesday and Thursday activity periods. The use of facilities such as residence halls or cafeterias for distribution of literature or for speakers is prohibited.

SAFETY GLASSES

Safety glasses must be worn in all chemistry laboratories and other facilities as required.

SALES AND SOLICITATIONS

Northeastern University is not a marketplace. Sales of material or solicitations, such as newspapers and other printed matter, insurance, foodstuffs, and all other articles are prohibited without the express written permission of designated officials of the university. Solicitations of any kind are also prohibited without the express written permission of designated officials. Exceptions to this policy are made for recognized student organizations and residence hall residents. Residence hall residents should request permission to sell within their housing unit from the director of residential life; recognized student organizations should request permission for sales from the director of student activities; all others should apply to the business manager of the university. Such permission, when granted, is for designated areas within the university and is subject to the restrictions imposed by the approving officials. General solicitation, especially in such areas as classrooms, lounges, and cafeterias, is not permitted.

SMOKING

All university administrative and classroom buildings are smoke free and tobacco free. The policy relates to all campuses. The only university facilities not covered by this policy are residence halls and apartment buildings. The sale of cigarettes and other tobacco products is prohibited on campus. Smoking cessation information and programs are available. For further information, contact the Office of Human Resources Management or University Health and Counseling Services.

TAPE RECORDERS

Students may not use tape recorders in the classroom without the instructor’s consent. Students with disabilities who need a tape recorder in the classroom may make arrangements through the Disability Resource Center, 20 Dodge Hall.

TEXTBOOKS

Students should purchase or have in their possession the assigned textbooks, problem books, manuals, and other supplies that may be necessary in a classroom or laboratory.

Students' Bill of Academic Rights and Responsibilities

This bill was drafted by the Student Senate, the vice president for student affairs, and members of the Faculty Senate. It was passed in the spring of 1992.

Academic Rights

We, the students of Northeastern University, believe that a quality education is the paramount goal of all students. In order to fulfill this goal, the university must recognize certain rights, which are set down in this document. (The student rights, through their representatives in the Student Government Association [SGA], described in these sections arise from faculty and staff employment responsibilities and obligations to the university. Northeastern University students recognize and accept that it is the sole prerogative of the university to enforce these obligations and responsibilities and to determine whether and to what extent they are being carried out or violated in specific instances. Northeastern University students recognize and accept that their ability

to effect redress of complaints arising from these rights is limited to the procedures specified in "Appeals Policies and Procedures."

COURSE-RELATED RIGHTS

Article 1 Students have the right to instructors who attend scheduled classes on time.

Article 2 Students have the right to view work they submit to satisfy course requirements after it is graded.

Article 3 Students have the right to adequate access to instructors.

Article 4 Students have the right to receive a course outline, which includes a fair and explicit grading policy, at the beginning of each course.

Article 5 Students have the right to instructors who communicate the material pertaining to the course effectively in the English language, except in the case of foreign language instruction.

Article 6 Students have the right to participate in and have access to Student Government Association student teacher course evaluations.

RIGHTS TO UNIVERSITY ACADEMIC SERVICES

Article 7 Students have the right to adequate access to effective academic services, as described in the student handbook and other university publications, provided by the university.

Article 8 Students have the right to an environment conducive to learning. (Because the university operates on a 12-month calendar in an urban environment, many construction, remodeling, renovation, and repair projects must take place while the university is in session and while other potential distractions from the learning process arise from the surrounding urban environment on which it is dependent but over which it exerts little or no control. Thus, though the university is committed to maintaining an appropriate learning environment for its students, Northeastern University students recognize and accept, as part of their relationship with the university, that the conditions described above may cause occasional disturbances to that environment. The articles shall be interpreted by the Office of the Provost in conjunction with the Office of the Vice President for Student Affairs, and shall be monitored by the Student Government Association. Further, should any student discover that he or she has been subject to any violation of the principles stated herein, the student should follow the appropriate complaint resolution procedure in "Appeals Policies and Procedures (p. 33)." The Student Government Association, if requested by the student, will monitor the progress of any student academic grievances.)

Article 9 Disabled students have the right to be treated in a nondiscriminatory fashion in accordance with the policies described in university publications and consonant state and federal laws.

SCHEDULING RIGHTS

Article 10 Students have the right to nonconflicting final exam schedules.

Article 11 Students have the right to final exam schedules in accordance with established university policy.

Article 12 Students have the right to be excused from academic commitments for a religious observance.

GENERAL ACADEMIC RIGHTS

Article 13 Students have the right to be informed, in a timely fashion, of proposed or actual university action to be taken against them.

Article 14 Students have the right of access to their academic and financial aid records and maintenance of the privacy of these records, as provided by the Federal Educational Rights and Privacy Act.

Article 15 Students have the right to be free from harassment by other members of the university community.

Article 16 Students have the right to the redress of academic grievances.

Student Responsibilities

It is each student's responsibility to:

1. Contribute to a climate of open inquiry and honesty in all aspects of the university's academic life.
2. Commit sufficient time and effort for study and the use of library, studio, and computational facilities in connection with each course.
3. Contribute to the classroom/laboratory/studio learning environment through discussion and active participation.
4. Acquire the necessary prerequisites for full participation in each academic course.
5. Attend scheduled classes regularly and on time.
6. Obtain help with problems encountered in a given course by seeking out faculty and teaching assistants outside class time.
7. Respect the concept of academic freedom of each faculty member.
8. Assist the university in its self-evaluation by responding honestly and conscientiously.

PhD Programs

PhD Programs

Northeastern offers the following PhD programs:

B

- Bioengineering, PhD (p. 127)
- Biology, PhD (p. 375)
- Biomedical Sciences, PhD (p. 268)

C

- Chemical Engineering, PhD (p. 137)
- Chemistry, PhD (p. 379)
- Civil Engineering, PhD (p. 143)
- Computer Engineering, PhD (p. 157)
- Computer Science, PhD (p. 100)
- Counseling Psychology, PhD (p. 239)
- Criminology and Justice Policy, PhD (p. 412)

E

- Economics, PhD (p. 418)
- Electrical Engineering, PhD (p. 157)
- English, PhD (p. 422)

H

- History, PhD (p. 426)

I

- Industrial Engineering, PhD (p. 181)
- Information Assurance, PhD (p. 114)
- Interdisciplinary Engineering, PhD (p. 224)

L

- Law, Criminology and Justice Policy, JD/PhD (p. 412)

M

- Marine and Environmental Sciences, PhD (p. 386)
- Mathematics, PhD (p. 392)
- Mechanical Engineering, PhD (p. 181)
- Medicinal Chemistry, PhD (p. 268)

N

- Network Science, PhD (p. 407)
- Nursing, PhD (p. 255)

P

- Personal Health Informatics, PhD (p. 109)
- Pharmaceutical Sciences, PhD (p. 268)
- Pharmacology, PhD (p. 268)
- Physics, PhD (p. 398)
- Political Science, PhD (p. 429)
- Population Health, PhD (p. 228)
- Psychology, PhD (p. 405)
- Public Policy, PhD (p. 437)

S

- School Psychology, PhD (p. 239)
- Sociology, PhD (p. 455)

PhD Network

The Northeastern PhD Network is an organization designed to build community among PhD students. The PhD Network provides students with support and resources university-wide to enhance their educational experience and career preparation.

Shared values unite PhD-centered activities at Northeastern, which prepares critical thinkers to tackle society's most challenging problems:

- **Excellence with purpose:** All PhD programs combine academic rigor with societal impact.
- **Innovative thinking:** Our education programs, mentoring activities, and research scholarship promote novel content and pathfinding approaches.
- **Crossing boundaries:** PhD students transcend disciplinary and international boundaries during their innovative educational journey.
- **Integrative education:** The integration of scholarship and research training with collaborative fieldwork and professional development provides a uniquely experiential education.
- **Inclusive diversity:** Students and faculty from diverse cultures and backgrounds drive excellence by bringing a wide range of perspectives to our distinctive programs.

At Northeastern, every PhD student has opportunities to acquire experience beyond traditional dissertation research. Exposure to and integration with our many industry and academic partners—through internships, fieldwork, and other collaborations—and in authentic settings—from laboratories, startup companies, and nonprofit institutions—lead to research with greater impact and broader career opportunities, both within and beyond academia.

Explore the PhD Network website (<https://phd.northeastern.edu/network/resources>) to learn more about:

- Resources that support PhD students' educational, professional, and personal lives
- Events created especially for PhD students, both at Northeastern and through our partners
- Funding in support of fellowships, internships, and conference attendance

Experiential PhD

Northeastern's Experiential PhD programs enable students to expand critical inquiry, learn, work, and chart a path to professional success through challenging assignments at organizations in industry, government, and the nonprofit sector. Beyond the comfort zone of their own university research group, PhD students enjoy immersive experiences that help shape their research perspective. They also bring fresh ideas and talent to their host organizations.

The immersive Experiential PhD transforms lives by:

- **Challenging students to solve problems in the context of society's needs and limitations**, a quest that helps shape the questions they raise and answer through their dissertation research

- **Equipping students for a lifetime with the creativity, cultural agility, and professional skills**—public speaking and communications, project management, leadership, and teamwork—they'll need to turn discoveries into solutions
- **Enriching fields of expertise** by introducing new mentors and collaborators to each student's professional network, host institution, and university research laboratory

Experiential PhD offers major benefits to both students and institutional partners. As students work to solve complex problems and chart careers as future innovators, their host institutions gain advantages like these:

- A deeper engagement in rapidly evolving fields of research
- Access to university facilities and senior faculty expertise
- Opportunities for senior leadership to mentor and co-publish with students and to serve on their dissertation committees
- A chance to recruit emerging talent
- Opportunities to partner with Northeastern, an entrepreneurial research university known for its innovative collaborations with academia, government, and industry

Northeastern is one of the only universities in the world to offer students options for learning and pursuing research outside of their primary research group in all of its doctoral degree programs. These real-world placements are highly flexible and customizable, tailored to the needs of Northeastern's PhD students and institutional partners.

Experiential PhD Leadership, Graduate Certificate

At Northeastern, PhD students enjoy a uniquely broad range of immersive opportunities to expand critical inquiry, learn, perform original research, and chart a path to professional success. Experiential PhD opportunities enable PhD students to step outside the comfort zone of their campus research group where students can pursue challenging, creative, customized assignments within industry, government, or the nonprofit sector that inform and enhance their pursuit of a research doctorate.

This Graduate Certificate in Experiential PhD Leadership aims to:

- **Challenge students to address complex problems** through experience within the context of real-world needs and their associated limitations in complex industry, government, or nonprofit sector organizations, broadening their view of stakeholders and value, shaping the very questions they raise and answer.
- **Equip students for a lifetime with the cultural agility, creativity, and professional skills**—public speaking and communications, meeting goals and expectations (e.g., project management for personal and professional purposes), teamwork, leadership, peer influence, leading from the middle—that they will need to translate their findings into impactful solutions.
- **Enrich every student's research group and, ultimately, fields of expertise** by fostering a collaborative, entrepreneurial, innovative approach to knowledge creation that expands their network far beyond academia to include intellectual and professional mentors and collaborators.

This graduate certificate designed for PhD students across all of Northeastern's research-based PhD programs provides students embarking on an experiential PhD with the preparation, project delivery,

and guidance for contextual integration within the context of leadership development. All students pursuing this leadership certificate will be mentored by their sponsor supervisor and dissertation advisor(s).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A B or higher is required in each course.

Requirements

Code	Title	Hours
PHDL 7600	Leading Self and Others	4
PHDL 7660	Experiential PhD Challenge Project 1	4
PHDL 7662	Experiential PhD Challenge Project 2	4
PHDL 7666	Contextual Integration	0

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

College of Arts, Media and Design

Website (<https://camd.northeastern.edu>)

Elizabeth Hudson, PhD, Dean

Andrea Raynor, MFA, Associate Dean for Undergraduate Programs
Jane Amidon, MLA, Associate Dean for Graduate Programs and Research
Hilary Poriss, PhD, Associate Dean for Faculty and Academic Affairs
Thomas Michael, MBA, Associate Dean for Administration and Finance
Katherine Calzada, M.Ed, Assistant Dean for Research Development
Adam Smith, MBA, Assistant Dean for Academic Programs

102 Ryder Hall
 617.373.3682
 617.373.5084 (fax)
camd@northeastern.edu (camdadvising@northeastern.edu)

Graduate Enrollment and Student Services

100 Meserve Hall
 617.373.5329 or 617.373.2566
gradcamd@northeastern.edu

The College of Arts, Media and Design (CAMD) offers graduate programs that build on existing knowledge and establish innovative areas of inquiry and practice. We work with students to frame, research, and answer transformative questions. Together, we challenge, engage, and shape global cultures and marketplaces.

Our Mission

We create a distinctive experiential education by leveraging emergent practices and scholarship in the arts, media, and design. Our unique combination of disciplines empowers innovative thinking and making. Our students become informed citizens and creative leaders with an entrepreneurial spirit.

Graduate Studies in the College of Arts, Media and Design

Welcome to graduate studies at CAMD. This is an exciting time to pursue advanced education and scholarship in creative fields. Never have the arts and culture been so clearly essential to our social, economic, and environmental future. From artist outreach in underserved communities to “serious” game design for health and security; from green building innovation to sustainable urban design; from international entertainment and media to provocative performances in “found spaces”; from incisive data visualization that changes how we view the world to cutting-edge journalism—our faculty and students are involved in a wealth of academic experiences, creative enterprises, and professional endeavors.

At CAMD, we take our mission and vision very seriously. We deliver an outstanding graduate education in traditional areas while exploring new approaches to this generation’s transformative questions. The “space between our disciplines” is intellectually rich, educationally vibrant, and professionally productive. Our interdisciplinary degree options provide a strong foundation of use-inspired, experientially informed course work and research opportunities. Our programs are designed to produce graduates equipped to engage the international marketplace and shape global culture.

Take a moment to introduce yourself to the faculty and graduate coordinators in your field of interest. Become familiar with the many events offered across CAMD and the campus. Stop by CAMD’s graduate programs website (<https://camd.northeastern.edu/academics/graduate>) often, where you’ll find current news and links to services

such as the registrar’s office. Familiarize yourself with the university’s graduate school website (<http://www.northeastern.edu/graduate>) to explore numerous links to graduate resources, policies, and student organizations.

We look forward to getting to know you and to incorporating your individual education and career interests into the graduate community of CAMD.

Academic Policies and Procedures

- General Information (p. 45)
- Master’s Degree Policies (p. 45)
- Graduate Student Classification (p. 46)

General Information

Five units in the College of Arts, Media and Design offer programs at the graduate level:

- Architecture
- Art + Design
- Game Design
- Journalism
- Music

Master’s Degree Policies

The College of Arts, Media and Design (CAMD) graduate studies sets minimum standards for all students to fulfill. In addition, departments and programs may have requirements that exceed the standards outlined below. Finally, the CAMD Graduate Programs General Regulations booklet (found at the college’s webpage (<https://camd.northeastern.edu/academics/graduate/current-students>)) further summarizes the expectations for student conduct, academic life, and the responsibilities of the students and the college to one another.

A candidate for the master’s degree must complete a minimum of 30 semester hours of graduate-level course work and such other study as may be required by the department in which the student is registered. To qualify for the degree, a minimum cumulative grade-point average (GPA) of 3.000, equivalent to a grade of B, must be obtained. This average will be calculated each semester. A student who does not make satisfactory progress toward degree requirements, as specified by the individual department, may be terminated from the program.

To maintain current student status within CAMD, graduate students must make satisfactory progress in their degree, including working toward the graduation requirement of a GPA of 3.000 and the timely completion of course work. See the university’s policy on academic standing (“Minimum Cumulative Grade-Point Average (p. 29)”).

All students must be registered in the last semester of their program. Any student who does not attend Northeastern University for a period of one year will be required to apply for readmission.

Electives

No more than 8 credit hours (6 credit hours for students in the music industry leadership program) of electives may be taken outside of CAMD. Any additional non-CAMD elective hours will not count toward the degree.

Graduate Student Scholarship (GSS)

Students who are registered in degree programs are eligible for a CAMD Graduate Student Scholarship (GSS). Award recipients will receive an official award letter from CAMD graduate studies. Pay attention to this letter as it is an official contract that should be read carefully. Graduate Student Scholarships (GSS) are contingent on satisfactory academic progress toward the degree and meeting department-specific guidelines. Recipients must be in full-time status and be registered for a minimum of 8 semester hours. Receipt of financial support administered by CAMD graduate studies requires that all students receiving awards must maintain a 3.000 cumulative GPA. Students whose cumulative GPA is below 3.000 will be placed on academic probationary status and are not eligible to receive the award while on probation. The GSS can be reactivated by raising the cumulative GPA to 3.000 in the subsequent semester; students who do not meet the minimum GPA requirement at the end of the next semester cannot receive additional probationary periods.

Leave of Absence

Full-time students who are not involved in any academic endeavor for a period of time are required to petition the manager of student services, through their department, for a leave of absence by completing the leave of absence petition through the myNortheastern web portal. CAMD graduate studies will not accept retroactive leave requests. Note that if a student is requesting a leave for medical reasons, students should contact University Health and Counseling Services (<http://www.northeastern.edu/uhs/forms>) at 617.373.2772. Leaves of absence generally are not approved for more than one calendar year at a time. International students should consult with an advisor at the Office of Global Services (<https://www.northeastern.edu/ogs>) for proper guidance. Leaves of absence are not appropriate for master's degree students who are working on a thesis but are away from the Northeastern campus. Except in the case of medical leaves, being on an approved leave of absence does not extend the amount of time allowed for degree completion or the makeup of incomplete grades.

Time Limitation

For the master's degree, course credits earned in the program of graduate study are valid for a maximum of seven years.

If students wish to apply for an extension of the time limit, they must submit a petition to their department of study. The petition must include a detailed plan for completion of all remaining degree requirements. In the case of time-limit extension requests for master's degree course work, the department must certify that the content of each of the courses has not changed since the time the student completed the course. If deemed appropriate, the department will recommend approval of the extension to CAMD graduate studies.

Changes in Requirements

The continuing development of CAMD graduate studies forces regular revision of curricula. When no hardship is imposed on the student because of changes and the facilities of the school permit, the student is expected to meet the most recent requirements. However, if it can be demonstrated that doing so imposes a substantial hardship, the requirements of the year in which the student matriculated will be applicable.

Thesis

Theses are required in some programs and should demonstrate the individual's capacity to execute independent work based on original material. Registration for the thesis course is required. Theses must be approved by the departmental graduate committee and must receive a grade of B (3.000) or better to be accepted. Students who have not completed their thesis after having registered for the specified number of thesis credits must register and pay for Thesis Continuation.

Graduate Student Classification

Regular Student

Those students who are admitted to a degree program.

Conditional Student

Students whose admissions files are missing documentation. Conditional students must submit the requested documentation, to the satisfaction of College of Arts, Media and Design (CAMD) graduate studies, no later than the completion of their first month of study. Once the documentation has been submitted, the student's status will be reevaluated.

Provisional Student

Students whose academic records do not qualify them for acceptance as regular students. Provisional students must obtain a B (3.000) average in the first 9 semester hours of study or meet specifically delineated departmental requirements to qualify for full acceptance to a degree program. Provisional students are not eligible for awards or financial aid.

Special Student

Special students are enrolled on a part-time basis (no more than 6 semester hours per semester). Credit can be earned for a maximum of 9 semester hours over time. Students interested in taking more than 9 semester hours must make a formal application to the degree program. Use the Internal Admission Application Notification form (<https://camd.northeastern.edu/academics/graduate/current-students>). Special students who do not register for four consecutive semesters (excluding summer semester) will be subject to review and possible withdrawal by CAMD graduate studies.

School of Architecture

Daniel Adams, MArch

Associate Professor and Director of the School of Architecture
151 Ryder Hall
617.373.4637
da.adams@northeastern.edu

Master of Architecture

Timothy Love, M.Arch, FAIA

Associate Professor and Graduate Coordinator
151 Ryder Hall
617.373.4637
t.love@northeastern.edu

Northeastern offers a Master of Architecture degree accredited by the National Architectural Accreditation Board (<http://www.naab.org>).

The program leverages the school's outstanding faculty and pragmatically grounded curriculum. The physical and cultural context of Boston serves as a laboratory for the program's design studios and is design focused but with a different approach than many schools. We find opportunities for innovation within the real estate and construction

industries and current policy debates—rather than outside them. This is how we intend to move architects to the center of the discussion about the future of our cities.

Students take courses in urban housing, practice-integrated design, and do original research on market-driven building types. The final degree project in the design studio offers an opportunity to leverage this research with real innovations in hybrid types, strategic alterations to existing ones, and to take on the challenge of finding prototypical solutions for systemic problems.

In addition to studio courses, graduate students take seminars in architectural theory and design strategy; and electives are available in real estate development, sustainable building techniques, urban landscape, and other topics. There is also a unique course that looks at case studies of architecture firms in practice, problem solving, and innovation. We seek to have students leave our program with a unique balance of technical, theoretical, and strategic tools to make a real difference in the profession.

Master of Design for Sustainable Urban Environments

Nicholas Brown

Associate Teaching Professor and Graduate Coordinator

617.373.4637

nic.brown@northeastern.edu

The Master of Design for Sustainable Urban Environments (MDes-SUEN) brings together the allied professional fields of environmental design, landscape architecture, and urban planning to offer advanced study and research opportunities in the design of ecologically and economically productive urban environments. The program seeks to supply graduates for the rapidly growing field of sustainable urbanism through a dynamic curricular mix of design, dialogue, and technical courses, enriched by diverse interdisciplinary electives.

The pedagogic and research focus of the MDes is the design, implementation, and management of sustainable urban environments from the scale of individual parcels to regional systems. Key topics include brownfield and waterfront revitalization, sustainable and secure pedestrian environments, urban habitat design and management, and green and blue infrastructure design and planning with an emphasis handling increased storm water and tidal influx in the urban landscape.

The MDes is a unique program of study in which urban landscape design, planning, and policy dovetail with environmental engineering, environmental science, art, and visualization. Boston's history of innovation in environmental design as well as its legacy of urban redevelopment provide a rich backdrop and laboratory of urban, infrastructural, and ecological prototypes that ideally position the program to creatively and critically explore local issues with global implications.

Contemporary urban theory includes a significant body of writing in the area of "Landscape-" and "Ecological-Urbanism," a critical discourse that looks at the full range of environmental strategies for urban sites with an emphasis on ecological thinking. The paradigm of sustainable environmental design is moving away from form-based planning toward dynamic ecosystem services. This program seeks to prepare students to be innovative and entrepreneurial designers able to combine economic, environmental, and social priorities to make next-generation public spaces and systems.

Programs

Master of Architecture (MArch)

- One-Year Program (p. 47)
- Two-Year Program (p. 48)
- Three-Year Program (p. 48)
- Three-Year Program—Advanced Degree Entrance (p. 50)

Master of Design for Sustainable Urban Environments (MDes-SUEN)

- One-Year Program (p. 51)
- Two-Year Program (p. 51)

Master of Architecture—One-Year Program

This program gives eligible candidates the opportunity to get a NAAB-accredited (<http://www.naab.org>) Master of Architecture degree in one year.

Open to candidates with either a Bachelor of Science in Architecture from Northeastern University or a professional Bachelor of Architecture degree from an accredited North American program with at least one year of IDP-approved professional experience.

Students engage in a two-semester research and design project based on pertinent contemporary topics chosen by the graduate faculty, or students may propose an independent research and design project. Team research is conducted and compiled into online and physical research books. This body of compiled research then becomes the basis of the intellectual framework for the individual students' design projects. This final degree project parallels an in-depth two-semester professional practice sequence that analyzes all of the contingencies of successful architectural projects, including architectural offices and their project management strategies, real estate development criteria, and associated project finance.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Professional Practice		
ARCH 6430	Case Studies 1	4
ARCH 6440	Case Studies 2	4
Topics and Seminars		
ARCH 6330	Seminar in Modern Architecture	4
ARCH 6340	Graduate Topics in Architecture	4
Research and Project		
ARCH 7130	Master's Research Studio	6
ARCH 7140	Master's Degree Project	6

Elective

Code	Title	Hours
	Students must complete a 4-semester-hour graduate elective.	4

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 6330	4	ARCH 6340	4	Vacation	0	Vacation	0
ARCH 6430	4	ARCH 6440	4				
ARCH 7130	6	ARCH 7140	6				
Elective	4						
	18		14		0		0

Total Hours: 32

Master of Architecture—Two-Year Program

This program offers students who have earned a Bachelor of Science in Architecture from an institution other than Northeastern to engage in the urban-focused curriculum that is offered at the School of Architecture. Students are awarded a M.Arch degree, which is NAAB-accredited (<http://www.naab.org>).

YEAR ONE

Options Studio offers topical content that best aligns with the research and practice expertise of the faculty, which provides students with the latest concepts in architectural design, theory, and research on a consistently updated and rotating basis. Students select their top choices of studio topics and instructors, giving them more flexibility in the areas for which they would like to focus their education. The Comprehensive Design Studio challenges the students to consider architectural connections at all scales, from the nut and bolt to the scale of the door or window to the scale of the whole building and the city. Additionally, students take classes in technology as well as architecture seminars.

YEAR TWO

In the final year, students engage in a two-semester research and design project based on pertinent contemporary topics chosen by the graduate faculty, or students may propose an independent research and design project. Team research is conducted and compiled into online and physical research books. This body of compiled research then becomes the basis of the intellectual framework for the individual students' design projects. This final degree project parallels an in-depth two-semester professional practice sequence that analyzes all of the contingencies of successful architectural projects, including architectural offices and their project management strategies, real estate development criteria, and associated project finance.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Building and Environment		
ARCH 5210	Environmental Systems	4
ARCH 5220	Integrated Building Systems	4
Studio		
ARCH 5115	Option Studio	6
ARCH 5120	Comprehensive Design Studio	6
Case Study		
ARCH 6430	Case Studies 1	4
ARCH 6440	Case Studies 2	4

Topics and Seminars		
ARCH 5310	Design Tactics and Operations	4
ARCH 6330	Seminar in Modern Architecture	4
ARCH 6340	Graduate Topics in Architecture	4
Research and Project		
ARCH 7130	Master's Research Studio	6
ARCH 7140	Master's Degree Project	6

Electives

Code	Title	Hours
Complete 8–16 semester hours (5000 level or above) from outside the following subject area:		8-16
ARCH		

Program Credit/GPA Requirements

60–68 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 5115	6	ARCH 5120	6	Vacation	0	Vacation	0
ARCH 5210 and ARCH 5211	4	ARCH 5220	4				
ARCH 5310	4	Elective (Required)	4				
Elective (Required)	4	Elective (Optional)	4				
	18		18		0		0

Year 2							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
ARCH 6330	4	ARCH 6340	4				
ARCH 6430	4	ARCH 6440	4				
ARCH 7130	6	ARCH 7140	6				
Elective (Optional)	4						
	18		14				

Total Hours: 68

Master of Architecture—Three-Year Program

Open to candidates who do not have a Bachelor of Science in Architecture or equivalent.

Applicants from all disciplines are welcome. Those who have some architecture course work may be eligible for advanced placement.

The program requires three years of study. Students have the option to spend a semester at the school's Segovia program (<https://camd.northeastern.edu/architecture/experiential-learning-co-op/experiential-learning/segovia-program>) as well as the option to pursue a summer co-op opportunity managed by the university's co-op program.

After completing a first-year introductory curriculum, students in the three-year program merge into the two-year MArch curriculum. This is a NAAB-accredited (<http://www.naab.org>) degree program.

YEAR ONE

In the first year, students take intensive studios, technology classes, and architectural history classes to immerse them in the studio culture of the school and to give them a strong foundation to begin the upper-level studios. The introductory graduate skills and design studios are specifically designed for the students in this program who do not have experience doing architectural drawing and designing. Students complete a series of projects that will give them an opportunity to develop the skills and the critical thinking needed in the graduate curriculum.

YEAR TWO

Students in their second year have the option to either study in our Segovia program (<https://camd.northeastern.edu/architecture/experiential-learning-co-op/experiential-learning/segovia-program>) in Spain or study in Boston.

The Option Studio offers topical content that best aligns with the research and practice expertise of the faculty, which provides students with the latest concepts in architectural design, theory, and research on a consistently updated and rotating basis. Students select their top choices of studio topics and instructors, giving them more flexibility in the areas for which they would like to focus their education. The Comprehensive Design Studio in the second semester challenges the students to consider architectural connections at all scales, from architectural detail, to architectural systems, to the whole building and its urban context.

YEAR THREE

In the final year, students engage in a two-semester research and design project based on pertinent contemporary topics chosen by the graduate faculty, or students may propose an independent research and design project. Team research is conducted and compiled into online and physical research books. This body of compiled research then becomes the basis of the intellectual framework for the individual students' design projects. This final degree project parallels an in-depth two-semester professional practice sequence that analyzes all of the contingencies of successful architectural projects, including architectural offices and their project management strategies, real estate development criteria, and associated project finance.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
History		
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4
ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	4
Building, Design, and Environment		
ARCH 2240	Architectonic Systems	4
ARCH 3450	Advanced Architectural Communication	4
ARCH 5210	Environmental Systems	4
ARCH 5220	Integrated Building Systems	4
ARCH 5230	Structural Systems	4
Studio		
ARCH 5115 or ARCH 3155	Option Studio Studio Abroad	6
ARCH 5120	Comprehensive Design Studio	6

ARCH 6100	Graduate Skills Studio	6
ARCH 6200	Graduate Studio 1: Architectural Design	6
Professional Practice		
ARCH 6430	Case Studies 1	4
ARCH 6440	Case Studies 2	4
Topics and Seminars		
ARCH 5310 or ARCH 3361	Design Tactics and Operations Architecture and Urbanism Abroad	4
ARCH 6330	Seminar in Modern Architecture	4
Complete the following (repeatable) course twice:		
ARCH 6340	Graduate Topics in Architecture	8
Research and Project		
ARCH 7130	Master's Research Studio	6
ARCH 7140	Master's Degree Project	6

Electives

Code	Title	Hours
Required Electives		
Complete 8 semester hours of non-ARCH courses (required).		8
Optional Electives		
Complete 4 semester hours of ARCH courses (optional). Electives outside architecture may be taken in consultation with your faculty advisor.		

Program Credit/GPA Requirements

96–104 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
ARCH 2240	4	ARCH 2340 and ARCH 2341	4	Vacation	0
ARCH 2330 (and)	4	ARCH 3450 (or Required Elective)	4		
ARCH 2331		ARCH 6200	6		
ARCH 5210 (and)	4	Elective (Optional)	4		
ARCH 5211					
ARCH 6100	6				
		18			18
					0
Year 2					
Fall	Hours	Spring	Hours		
ARCH 5115 (or Global Study Abroad)	6	ARCH 3450 (or Required Elective)	4		
ARCH 5230 (or Global Study Abroad)	4	ARCH 5120	6		
ARCH 5310 (or Global Study Abroad)	4	ARCH 5220	4		

Optional Elective (or Global Study Abroad)	4 ARCH 6340 (1 of 2)	4
18		18
Year 3		
Fall	Hours Spring	Hours
ARCH 6330	4 ARCH 6340 (2 of 2)	4
ARCH 6430	4 ARCH 6440	4
ARCH 7130	6 ARCH 7140	6
Elective (Optional)	4	
18		14

Total Hours: 104

Total credits for the three-year track may range from 96–104 depending on optional electives. For students attending Segovia, the range will be 96–102.

Students must take Arch 5230 in the fall of year three if participating in the Segovia program in the fall of year two.

Master of Architecture—Three-Year Program—Advanced Degree Entrance

Open to candidates who do not have a Bachelor of Science in Architecture or an equivalent degree.

Students with some background in architecture may be eligible for advanced placement into the program. Advanced placement will be determined by an applicant's transcript and portfolio.

After completing a first-year introductory curriculum, students in the three-year program merge into the two-year MArch curriculum. This is a NAAB-accredited (<http://www.naab.org>) degree program.

Only select courses in the first year of the program will be waived. All waivers are at the discretion of the school and applicants will be required to provide documentation for any waivers (78–100 credits total based on waivers).

The minimum course work for all students in the first year of the program is:

- Two studio courses (minimum 10 credits total)
- Two graduate electives (minimum 8 credits total)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

All advanced-entry students must complete a minimum of 10 semester hours per semester in the first year. Course waivers are determined by the faculty and students should consult with their advisor.

Prerequisites

Courses listed below may be waived as determined by faculty advisor.

Code	Title	Hours
History		
ARCH 2330	Architecture, Modernity, and the City, 1800 to 1910	4

ARCH 2340	Architecture, Modernity, and the City, 1910 to 1980	4
Building, Design, and Environment		
ARCH 2240	Architectonic Systems	4
ARCH 5210	Environmental Systems	4
ARCH 5230	Structural Systems	4

Core Requirements

Code	Title	Hours
Building, Design, and Environment		
ARCH 3450	Advanced Architectural Communication	4
ARCH 5220	Integrated Building Systems	4
Studio		
ARCH 5115	Option Studio (or)	6
or ARCH 3155	Studio Abroad	
ARCH 5120	Comprehensive Design Studio	6
ARCH 6100	Graduate Skills Studio	6
ARCH 6200	Graduate Studio 1: Architectural Design	6
Professional Practice		
ARCH 6430	Case Studies 1	4
ARCH 6440	Case Studies 2	4
Topics and Seminars		
ARCH 5310	Design Tactics and Operations	4
or ARCH 3361	Architecture and Urbanism Abroad	
ARCH 6330	Seminar in Modern Architecture	4
Complete the following (repeatable) course twice:		8
ARCH 6340	Graduate Topics in Architecture	
Research and Project		
ARCH 7130	Master's Research Studio	6
ARCH 7140	Master's Degree Project	6

Electives

Code	Title	Hours
Required Electives		
Complete 8 semester hours of non-ARCH courses.		8
Additional Elective or Topics		
Complete 8 semester hours of non-ARCH courses.		8

Program Credit/GPA Requirements

78–100 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Year 1			
Fall	Hours	Spring	Hours
ARCH 2240	4	ARCH 2340 and ARCH 2341	4
ARCH 2330 (and)	4	ARCH 3450 (or Required Elective)	4
ARCH 2331		ARCH 6200	6
ARCH 5210 (and)	4	Elective (Optional)	4
ARCH 5211			
ARCH 6100	6		
18		18	

Year 2		
Fall	Hours Spring	Hours
ARCH 5115 (or Global Study Abroad)	6 ARCH 3450 (or Required Elective)	4
ARCH 5230 (or Global Study Abroad)	4 ARCH 5120	6
ARCH 5310 (or Global Study Abroad)	4 ARCH 5220	4
Optional Elective (or Global Study Abroad)	4 ARCH 6340 (1 of 2)	4
18		18

Year 3		
Fall	Hours Spring	Hours
ARCH 6430	4 ARCH 6340 (2 of 2)	4
ARCH 6330	4 ARCH 6440	4
ARCH 7130	6 ARCH 7140	6
Elective (Optional)	4	
18		14

Total Hours: 104

Total credits for the AP track may range from 78–104 depending on waivers and optional electives. For students attending Segovia, the range will be 78–102.

Note: Only courses in year one may be waived. Course waivers are at the discretion of the program director.

Students must take ARCH 5230 in the fall of year three if participating in the Segovia program in the fall of year two.

Master of Design for Sustainable Urban Environments—One-Year Program

The one-year Master of Design for Sustainable Urban Environments (MDes-SUEN) is open to students holding an accredited, first-professional degree in landscape architecture, architecture, planning, or urban design. The 36-credit program offers a core sequence of advanced design research studios, proseminars, and urban ecology and technology workshops complemented by interdisciplinary electives.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Studio		
SUEN 7130	Master’s Research Studio: Design and the Resilient City	6
SUEN 7140	Master’s Research Studio: Master’s Project	6
Proseminar		
Complete 8 semester hours from the following (repeatable) courses:		8
SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments	
SUEN 6340	Topics in Urban Environmental Design	

Technology		
SUEN 7230	Urban Ecologies and Technologies 1	4
SUEN 7240	Urban Ecologies and Technologies 2	4

Electives

Electives in other disciplines may be taken in consultation with your faculty advisor.

Code	Title	Hours
Complete 8 semester hours from the following subject areas: SUEN, ARCH, LARC, PPUA, LPSC, and SBSY		8

Program Credit/GPA Requirements

36 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Year 1		
Fall	Hours Spring	Hours
SUEN 7130	6 SUEN 7140 (or co-op*)	6
SUEN 7230	4 SUEN 7240	4
SUEN 7320	4 SUEN 7320 (or)	4
Elective (Required)	4 SUEN 6340	
Elective (Required)		4
18		18

Total Hours: 36

*Students may opt to do a graduate co-op. Co-op does not count toward degree credits.

Master of Design for Sustainable Urban Environments—Two-Year Program

The two-year Master of Design for Sustainable Urban Environments (MDes-SUEN) is open to students entering with a bachelor’s degree in any field. The 64-credit program provides a full year of core skill sets including design; site analysis, implementation, and visualization; history/theory; and policy. This includes introduction to basic earthworks, water, and plants systems as well as the principles of landscape and urban ecology.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Studio		
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites	6
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	6
SUEN 7130	Master’s Research Studio: Design and the Resilient City	6
SUEN 7140	Master’s Research Studio: Master’s Project	6
Cities: Design and Planning		
SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory	4

LPSC 7312	Cities, Sustainability, and Climate Change	4
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Proseminar

Complete 8 semester hours from the following (repeatable) courses:	8
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SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments	
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SUEN 6340	Topics in Urban Environmental Design	
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Technology

SUEN 6210	Implementation and Visualization for Urban Environments 1	4
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SUEN 6220	Implementation and Visualization for Urban Environments 2	4
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SUEN 7230	Urban Ecologies and Technologies 1	4
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SUEN 7240	Urban Ecologies and Technologies 2	4
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Electives

Electives in other disciplines may be taken in consultation with your faculty advisor.

Code	Title	Hours
Complete 8 semester hours from the following subject areas:		8

SUEN, ARCH, LARC, PPUA, LPSC, SBSY		
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Program Credit/GPA Requirements

64 total semester hours required

Minimum 3.000 GPA required

Plan of Study**Year 1**

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
SUEN 6110	6	SUEN 6120	6	Vacation	0	Vacation	0
SUEN 6210	4	SUEN 6220	4				
SUEN 6310	4	LPSC 7312	4				
Elective (Required)	4	Elective (Required)	4				
	18		18		0		0

Year 2

Fall	Hours	Spring	Hours
SUEN 7130	6	SUEN 7140 (or co-op)*	6
SUEN 7320	4	SUEN 7320 (or)	4
SUEN 7230	4	SUEN 6340	
Elective (Optional)	4	SUEN 7240	4
		Elective (Optional)	4
	18		18

Total Hours: 72

*Note: Students may opt to do a graduate co-op. Co-op does not count toward degree credits.

Total credits required are 64 (with two optional electives, 72).

Art + Design

Website (<http://www.northeastern.edu/camd/artdesign/academics/graduate>)

Tad Hirsch, PhD
Chair

239 Ryder Hall
617.373.4340
Nhora Delgado, Administrative Assistant, n.delgado@northeastern.edu

Graduate Program Coordinators**Dietmar Offenhuber, PhD**

Assistant Professor and Information Design and Visualization
Graduate Coordinator
311 Ryder Hall

617.373.3378
www.northeastern.edu/visualization (<http://www.northeastern.edu/visualization>)

Christoffer Holmgård Pederson, PhD

Assistant Professor and Game Science and Design and Game
Analytics Graduate Coordinator
210B Lake Hall

www.northeastern.edu/camd/gamesdesign (<https://camd.northeastern.edu/gamesdesign>)

Sarah Kanouse, MFA

Associate Professor and Interdisciplinary Arts Graduate Coordinator
319 Ryder Hall
617.373.6371

camd.northeastern.edu/artdesign/academic-programs/mfa-interdisciplinary-arts/ (<https://camd.northeastern.edu/artdesign/academic-programs/mfa-interdisciplinary-arts/>)

Kristian Kloeckl, PhD

Associate Professor and Experience Design Graduate Coordinator
448D Ryder Hall
617.373.6987

camd.northeastern.edu/artdesign/academic-programs/experience-design/ (<https://camd.northeastern.edu/artdesign/academic-programs/experience-design/>)

The graduate programs in the Department of Art + Design are designed to cultivate capacity and fluency in a range of disciplines and practices to create and deliver value and benefit for an increasingly connected and diverse world. Spanning many subjects, interests, and intentions across disparate fields and manifold practices of art, media, and design, our master's and certificate programs will challenge and inspire you to push the boundaries of cultural production and stewardship and social and civic impact. We strive to empower you to bring your ideas to life through design conversations, media making, and artistic expression and enjoy richly rewarding careers and lives.

Programs**Master of Fine Arts (MFA)**

- Experience Design (p. 53)
- Information Design and Visualization (p. 54)
- Interdisciplinary Arts (p. 55)

Master of Science (MS)

- Experience Design (p. 56)
- Game Science and Design (p. 57)

Graduate Certificate

- Experience Design (p. 58)
- Game Analytics (p. 59)
- Information Design and Visualization (p. 59)

Experience Design, MFA

The Master of Fine Arts in Experience Design embraces research-driven design thinking for entrepreneurship, innovation, and other areas, preparing students to be vital contributors and leaders at the intersection of innovation and design.

Experience design is a holistic and integrative approach to design that utilizes investigation into the human experience in specific situations to improve its quality, given an understanding of human goals, needs, and desires. For example, in the context of healthcare, an experience designer does not focus on the design of any one technology product, information system, or physical space. Instead, the designer is charged with understanding and improving the overall sequence of events that impact the patient before and during a hospital stay as well as through follow-up care.

The experience design program moves beyond design thinking to produce outcomes that demonstrate the value of human-centered research and design methods. It draws on findings from a range of professional and scholarly disciplines (including business, psychology, human-computer interaction, engineering, cybernetics) to understand and shape specific situations. It extends across many industries and aspects of life: healthcare, technology, services, travel, education, entertainment, shopping, dining, and the nature of work itself.

Through examining how people behave in a *real* context in relation to emerging technologies, the Master of Fine Arts in Experience Design allows graduates from design and related disciplines (such as communications, computer science, business, architecture, art, journalism, humanities, and the social sciences) to gain knowledge and experience in the design competencies. To accomplish these goals, students will learn how to invoke cooperation, collaboration, and integration across disciplines and practices.

The Master of Fine Arts in Experience Design seeks to prepare students to be vital contributors and leaders of professional experience design teams where technological innovation intersects with design. Successful graduates will be able to analyze how people undergo real-world situations, enabling them to enrich experience by orchestrating new design-driven relationships. They will be equipped with the skills to identify shortcomings as well as opportunities for improved engagement between systems and elements—virtual or physical—with the humans who encounter them.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
ARTG 5120	Research Methods for Design	4

ARTG 5600	Experience Design Studio 1: Principles	4
ARTG 5610	Design Systems	4
ARTG 5620	Notational Systems for Experience	4
ARTG 5640	Prototyping for Experience Design	4
ARTG 6310	Design for Behavior and Experience	4
ARTG 6600	Experience Design Studio 2: Group and Interpersonal	4
ARTG 6700		4
Thesis		
ARTG 7100	Thesis Seminar for Design	4
ARTG 7990	Thesis	8

Electives

Code	Title	Hours
Complete 16 semester hours from the following:		
ARTD 5001	Art, Context, Action 1	16
ARTG 5310	Visual Cognition	
ARTG 5320	Statistics Basics for Designers	
ARTG 5330	Visualization Technologies 1	
ARTG 6320	Design of Information-Rich Environments	
ARTG 6330	Information Design Mapping Strategies	
Other electives may be chosen in consultation with program coordinator.		

Program Credit/GPA Requirements

60 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Co-op (Optional) Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
ARTG 5600	4	ARTG 6600	4	Co-op (optional)	0
ARTG 5620	4	ARTG 6310	4		
ARTG 5610	4	ARTG 5640	4		
Elective	4	ARTG 5120	4		
		16			0
			16		
Year 2					
Fall	Hours	Spring	Hours		
ARTG 6700	4	ARTG 7990	8		
ARTG 7100	4	Elective	4		
Elective	4				
Elective	4				
		16			12

Total Hours: 60

Sample Two Years, No Co-op Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
ARTG 5600	4	ARTG 6600	4	Vacation	0
ARTG 5620	4	ARTG 6310	4		

ARTG 5610	4	ARTG 5640	4
Elective	4	ARTG 5120	4
16		16	
0			
Year 2			
Fall	Hours	Spring	Hours
ARTG 6700	4	ARTG 7990	8
ARTG 7100	4	Elective	4
Elective	4		
Elective	4		
16		12	

Total Hours: 60

Information Design and Visualization, MFA

The Master of Fine Arts in Information Design and Visualization focuses on the analytical and visual communication of information. Successful graduates are experts in the visual languages of data who produce effective and meaningful visual displays of abstract information. They collaborate with other professionals, researchers, or clients in a variety of fields and settings.

Students have an opportunity to gain an understanding of the principles of translating data and information into visual, material, and dynamic forms and to learn to integrate theoretical, visual, and technical aspects of structuring and representing data to provide a broad range of audiences increased access to socially relevant issues. The curriculum is built upon an established undergraduate program in graphic, information, and interaction design and seeks applicants from diverse fields of study—not just visual communications—who are interested in information visualization and communication of information through visual and analytical means. Practicing professionals and recent undergraduates in a variety of fields (architecture, graphic design, journalism, communications, business, the humanities, and sciences) who desire a fluency in information design should apply.

Graduates are prepared to work effectively in a dynamic and burgeoning field of practice and research in environments including design firms, research centers, corporations, academic institutions, and government and urban agencies. The program seeks to produce professionals skilled in design principles and practices needed to assume leadership roles in an evolving interdisciplinary field. Students will also be well positioned to pursue PhDs and academic careers.

Fall semester 1 is dedicated to foundations, including an introductory course in information visualization and visual communication, a seminar on the history of visualization, a studio course, and an introduction to programming with d3. Students with strong prior experience in programming can replace the latter course with an elective.

Spring semester 2 is dedicated to the exploration of diverse research topics. In Studio 2 you will create an interactive visualization project; in information design theory, you will obtain theoretical background in design theory and concept mapping; the research methods class will prepare you for the thesis process by introducing you to different research methods; and an open elective will allow you to pick a research theme you are interested in.

Fall semester 3 is dedicated to developing your thesis in theory and practice. All courses in this semester are dedicated to this goal, including the research seminar and the Studio 3 course. Two electives allow you to add competencies related to your thesis topic.

Fall semester 4 is finally all about finalizing the thesis and the thesis exhibition.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Studio		
ARTG 5100	Information Design Studio 1: Principles	4
ARTG 6100	Information Design Studio 2: Dynamic Mapping and Models	4
ARTG 6200	Information Design Studio 3: Synthesis	4
Theory and Research Methods		
ARTG 5120	Research Methods for Design	4
ARTG 5330	Visualization Technologies 1	4
ARTG 6110	Information Design Theory and Critical Thinking	4
Typography and History		
ARTG 5110	Information Design History	4
ARTG 5130	Visual Communication for Information Design	4
Thesis		
ARTG 7100	Thesis Seminar for Design	4
ARTG 7990	Thesis	8

Electives

Code	Title	Hours
In consultation with faculty advisor, complete four courses from the following:		
ARTG 5310	Visual Cognition	
ARTG 5320	Statistics Basics for Designers	
ARTG 6310	Design for Behavior and Experience	
ARTG 6320	Design of Information-Rich Environments	
ARTG 6330	Information Design Mapping Strategies	
ARTG 6900	Special Topics in Design	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	

Program Credit/GPA Requirements

60 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Optional Co-op Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
ARTG 5100	4	ARTG 5120	4	ARTE 6964	
ARTG 5110	4	ARTG 6100	4		
ARTG 5130	4	ARTG 6110	4		

ARTG 5330	4 Open elective	4		
		16	16	0
Year 2				
Fall	Hours	Spring	Hours	
ARTG 6200	4	ARTG 7990	8	
ARTG 7100	4	ARTG 7991	4	
Open elective	4	Open elective	4	
Open elective	4			
		16	16	

Total Hours: 64

Sample Two Years, No Co-op Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
ARTG 5100	4	ARTG 5120	4	Vacation	0
ARTG 5110	4	ARTG 6100	4		
ARTG 5130	4	ARTG 6110	4		
ARTG 5330	4	Open elective	4		
		16	16		0

Year 2				
Fall	Hours	Spring	Hours	
ARTG 6200	4	ARTG 7990	8	
ARTG 7100	4	ARTG 7991		
Open elective	4	Open elective	4	
Open elective	4			
		16	12	

Total Hours: 60

Interdisciplinary Arts, MFA

Students in the **Master of Fine Arts in Interdisciplinary Arts** use creative work to inquire and intervene in today's most pressing social and ecological concerns. Positioned at the intersection of the visual arts, architecture, music, visual and media studies, and the expanded field of design, the curriculum supports the development of ambitious projects by a diverse, international group of creative practitioners.

Our students use the tools and insights of contemporary creative practice to intervene in public discourse and the social imagination through media, research-, and/or community-based approaches. The curriculum centers around a series of core critique seminars that provide a foundation and home base. Students then customize their education from a wide range of studio and academic courses. Regular workshops with visiting faculty emphasize hands-on engagement in the creative process of leading artists, while summer residency or co-op experiences allow students to complete self-directed projects, supported by faculty and peer mentoring. The MFA degree requires a thesis project and companion paper, as well as a minimum 3.000 GPA over 60 semester hours of study.

Over the course of the two-year program, successful students learn to articulate their goals, context, and audience and develop the professional skills necessary to sustain their practices. Successful graduates are prepared to forge their own paths as publicly engaged artists working independently or in arts organizations, social entrepreneurship ventures, the nonprofit sector, and as faculty in academic institutions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
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Seminars		
Enrollment in a section of each course is required each term. The format of the course is critique-seminar.		16
ARTD 5001	Art, Context, Action 1	
ARTD 5002	Art, Context, Action 2	
ARTD 6001	Art, Media, Participation 1	
ARTD 6002	Art, Media, Participation 2	

Research Methods		
In consultation with your faculty advisor, complete one course from the following:		4
ARTG 5120	Research Methods for Design	
ARTE 6210	Research Methods for the Creative Arts	
GSND 5130	Mixed Research Methods for Games	

Project		
ARTD 5301	Independent Research Project 1	4

Thesis and Exhibition		
ARTE 7100	Thesis Proposal	4
ARTE 7990	Thesis	4
ARTE 7996	Thesis Continuation	0

Electives

Code	Title	Hours
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Studio Electives		
In consultation with your faculty advisor, complete four courses from the following:		16
ARTD 5582	Collaborative Video and Community Engagement	
ARTE 5901	Special Topics in Art and Design Studio	
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5310	Visual Cognition	
ARTG 5330	Visualization Technologies 1	
ARTG 5620	Notational Systems for Experience	
ARTG 6100	Information Design Studio 2: Dynamic Mapping and Models	
ARTS 5100	Visual Ideation	
ARTS 6000	Studio	
ARTS 7896	Studio Continuation	

Art History Electives		
In consultation with your faculty advisor, complete three courses from the following:		12
ARTH 5100	Contemporary Art Theory and Criticism	
ARTH 5200	Issues in Contemporary Art	
ARTH 5400	Contemporary Visual Culture	

ARTH 5902	Special Topics in Art and Design History
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Program Credit/GPA Requirements

60 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Internship or Co-op (Optional) Plan of Study

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer Full Semester
ARTD 5001	4	ARTD 5002	4	ARTD 5301	4	Internship or co-op (optional)
History, theory, and critical studies elective	4	History, theory, and critical studies elective	4	Note: Many art residencies can be pursued not as internships but for credit as independent research, ARTD 5301, or ARTD 6301.		
Studio elective	4	Research methods	4			
Studio elective	4	Studio elective	4			
		16		16		4
Total Hours: 60						

Year 2			
Fall	Hours	Spring	Hours
ARTD 6001	4	ARTD 6002	4
ARTE 7100	4	ARTE 7990	4
History, theory, and critical studies elective	4		
Studio elective	4		
		16	
		8	

Total Hours: 60

Sample Two Years, No Co-op Plan of Study

Year 1						
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2
ARTD 5001	4	ARTD 5002	4	Studio elective or	4	Studio elective or
History, theory, and critical studies elective	4	History, theory, and critical studies elective	4	ARTD 5301	4	ARTD 6301
Studio elective	4	Research methods	4			

Studio elective	4	Studio elective	4		
		16		16	4
				4	4

Year 2			
Fall	Hours	Spring	Hours
ARTD 6001	4	ARTD 6002	4
ARTE 7100	4	ARTE 7990	4
History, theory, and critical studies elective	4		
		12	
		8	
Total Hours: 60			

Experience Design, MS

The Master of Science in Experience Design embraces research-driven design thinking for entrepreneurship, innovation, and other areas, preparing students to be vital contributors and leaders at the intersection of innovation and design.

Experience design is a holistic and integrative approach to design that utilizes investigation into the human experience in specific situations to improve its quality, given an understanding of human goals, needs, and desires. For example, in the context of healthcare, an experience designer does not focus on the design of any one technology product, information system, or physical space. Instead, the designer is charged with understanding and improving the overall sequence of events that impact the patient before and during a hospital stay as well as through follow-up care.

The experience design program moves beyond design thinking to produce outcomes that demonstrate the value of human-centered research and design methods. It draws on findings from a range of professional and scholarly disciplines (including business, psychology, human-computer interaction, engineering, cybernetics) to understand and shape specific situations. It extends across many industries and aspects of life: healthcare, technology, services, travel, education, entertainment, shopping, dining, and the nature of work itself.

Through examining how people behave in a *real* context in relation to emerging technologies, the Master of Science in Experience Design allows graduates from design and related disciplines (such as communications, computer science, business, architecture, art, journalism, humanities, and the social sciences) to gain knowledge and experience in the design competencies. To accomplish these goals, students will learn how to invoke cooperation, collaboration, and integration across disciplines and practices.

The Master of Science in Experience Design seeks to prepare students to be vital contributors and leaders of professional experience design teams where technological innovation intersects with design. Successful graduates will be able to analyze how people undergo real-world situations, enabling them to enrich experience by orchestrating new design-driven relationships. They will be equipped with the skills to identify shortcomings as well as opportunities for improved engagement between systems and elements—virtual or physical—with the humans who encounter them.

The MS degree is intended for graduate students from related fields—media, design, communications, data science, and more—who would like

to acquire competencies in experience design to complement their skills and address their professional needs. Embedded in the course offering of our Master of Fine Arts in Experience Design (p. 53) program, students in the MS program will have the opportunity to join MFA students for activities such as attending guest lectures and workshops.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ARTG 5600	Experience Design Studio 1: Principles	4
ARTG 5610	Design Systems	4
ARTG 5620	Notational Systems for Experience	4
ARTG 5630		4
ARTG 6310	Design for Behavior and Experience	4
ARTG 6600	Experience Design Studio 2: Group and Interpersonal	4

Electives

Code	Title	Hours
Complete two of the following:		8
ARTG 5310	Visual Cognition	
ARTG 5320	Statistics Basics for Designers	
ARTG 5330	Visualization Technologies 1	
ARTG 5640	Prototyping for Experience Design	
Other electives may be chosen in consultation with program coordinator.		

Program Credit/GPA Requirements

32 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Year 1			
Fall	Hours	Spring	Hours
ARTG 5600	4	ARTG 5120	4
ARTG 5610	4	ARTG 6310	4
ARTG 5620	4	ARTG 6600	4
Elective	4	Elective	4
		16	16

Total Hours: 32

*Students may opt to do a graduate co-op. Co-op does not count toward credits required for the degree.

Game Science and Design, MS

The **Master of Science (MS) in Game Science and Design** is a program that seeks to give students a comprehensive understanding of how successful game products are created in a player-centric environment. Focusing on the science of game development, students have an opportunity to learn the design and technological skills needed to build a game and develop a deep understanding of playability and analytics that make products successful in an increasingly competitive marketplace.

The game industry has expanded to include social and mobile gaming; games in health, education, and training; and innovations in play

psychology, middleware, graphics tools, game mechanics, game evaluation methods, and advanced artificial intelligence and narrative techniques. It has become an increasingly competitive space.

The selectiveness of the industry and the diversity of the skills required mean that students seeking entry need both broad and deep skills. As an emergent industry using diverse technology and collaborative practices, the game industry needs professionals with interdisciplinary skill sets who can meld knowledge about development with knowledge about evaluation methods and players' behavior and psychology.

Jointly offered by Northeastern's Colleges of Arts, Media and Design and Computer and Information Science (<http://www.ccs.neu.edu>), the **Master in Science in Game Science and Design** is a one-of-a-kind interdisciplinary program that seeks to prepare students to meet this need by weaving together science and design. This is a two-year, 34-credit-hour program.

The degree offers three concentrations:

- Game analytics: focusing on data analysis of gameplay and other game data to make the game successful
- Game user research: focusing on gauging the user experience to enable designers to develop an enjoyable game experience
- Game design and development: focusing on the design or technical side of game development

All admitted students will be assigned to an advisor who will help them select a pathway with a coherent set of electives depending on their career goals. The advisor will also monitor their progress through the master's degree.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
GSND 5110	Game Design and Analysis	4
GSND 5111	Seminar for GSND 5110	1
GSND 5122	Business Models in the Game Industry	1
GSND 5130	Mixed Research Methods for Games	4
or PPUA 5301	Introduction to Computational Statistics	
Thesis		
GSND 7990	Thesis	4

Specializations

In consultation with your faculty advisor, declare one specialization option by spring of your first year.

Complete one of the following specializations:

GAME ANALYTICS

Code	Title	Hours
Complete three of the following:		12
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

GAME USER RESEARCH

Code	Title	Hours
Complete three of the following:		12
CS 5340	Computer/Human Interaction	
GSND 6320	Psychology of Play	
GSND 6330	Player Experience	
GSND 6340	Biometrics for Design	

GAME DESIGN AND DEVELOPMENT

Code	Title	Hours
Complete three of the following:		12
CS 5150	Game Artificial Intelligence	
CS 5850	Building Game Engines	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	

Electives

Note: In consultation with your faculty advisor, you may complete two other related courses offered by all options.

Code	Title	Hours
Complete two of the following:		8
CS 5150	Game Artificial Intelligence	
CS 5340	Computer/Human Interaction	
CS 5850	Building Game Engines	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	
GSND 6320	Psychology of Play	
GSND 6330	Player Experience	
GSND 6340	Biometrics for Design	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

34 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Co-op (Optional) Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Co-op (Optional)	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
		9			0

Year 2					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5122	1	General elective	4		
Concentration elective	4	GSND 7990	4		
General elective	4				
		9			8

Total Hours: 34

Sample Two Years, No Co-op Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Vacation	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
		9			0

Year 2					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5122	1	General elective	4		
Concentration elective	4	GSND 7990	4		
General elective	4				
		9			8

Total Hours: 34

Experience Design, Graduate Certificate

The Graduate Certificate in Experience Design embraces research-driven design thinking for entrepreneurship, innovation, and other areas, preparing students to be vital contributors and leaders at the intersection of innovation and design.

Experience design is a holistic and integrative approach to design that utilizes investigation into the human experience in specific situations to improve its quality, given an understanding of human goals, needs, and desires. For example, in the context of healthcare, an experience designer does not focus on the design of any one technology product, information system, or physical space. Instead, the designer is charged with understanding and improving the overall sequence of events that impact the patient before and during a hospital stay as well as through follow-up care.

The Graduate Certificate in Experience Design moves beyond design thinking to produce outcomes that demonstrate the value of human-centered research and design methods. It draws on findings from a range of professional and scholarly disciplines (including business, psychology, human-computer interaction, engineering, cybernetics) to understand and shape specific situations. It extends across many industries and aspects of life: healthcare, technology, services, travel, education, entertainment, shopping, dining, and the nature of work itself.

Through examining how people behave in a *real* context in relation to emerging technologies, the Graduate Certificate in Experience Design allows working professionals or graduates from design and related disciplines (such as communications, computer science, business, architecture, art, journalism, humanities, and the social sciences) to gain knowledge and experience in the design competencies. To accomplish these goals, students need to learn how to invoke cooperation, collaboration, and integration across disciplines and practices.

The Graduate Certificate in Experience Design is designed to prepare students to be vital contributors and leaders of professional experience design teams where technological innovation intersects with design. Successful graduates will be able to analyze how people undergo real-world situations, enabling them to enrich experience by orchestrating new design-driven relationships. They will be equipped with the skills to identify shortcomings as well as opportunities for improved engagement between systems and elements—virtual or physical—with the humans who encounter them.

The certificate is intended for practitioners and graduate students from related fields—media, design, communications, data science, and more—who would like to acquire competencies in experience design to complement their skills and address their professional needs. Embedded in the course offering of our Master of Fine Arts in Experience Design (p. 53) program, students in the certificate program will have the opportunity to join MFA students for activities such as attending guest lectures and workshops.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ARTG 5610	Design Systems	4
ARTG 5620	Notational Systems for Experience	4
ARTG 6310	Design for Behavior and Experience	4

Elective

Code	Title	Hours
Complete 4 semester hours of 5000- to 6000-level course work in the following subject area:		4
ARTG		

Program Credit/GPA Requirements

16 total semester hours required
 Minimum 3.000 GPA required

Game Analytics, Graduate Certificate

The Graduate Certificate in Game Analytics offers students an opportunity to obtain the ability to analyze vast amounts of data, which has become critical as big data has rapidly become a competitive space across multiple industries from games to healthcare, urban planning, and social media.

In the game industry, data-driven techniques for analyzing game data have become a strategic necessity. The game development process has shifted from “design, develop, release” to “design, develop, release, and continuously fine-tune based on analytics.” All free-to-play games on mobile, tablets, touch devices, and web-delivered platforms use analytics to develop strategies for monetization and assessment.

As game companies have realized the importance of data analytics in the process of design and production, they have dramatically increased the demand for qualified game analysts. Northeastern’s unique Graduate Certificate in Game Analytics is a one-year, 20-semester-hour program developed to meet this need.

Program Requirements

Complete all five courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Data Science Core		
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
PPUA 5302	Information Design and Visual Analytics	4
Game Science and Design Core		
GSND 5110	Game Design and Analysis	4
GSND 6350	Data-Driven Player Modeling	4

Program Credit/GPA Requirements

20 total semester hours required
 Minimum 3.000 GPA required

Information Design and Visualization, Graduate Certificate

The Graduate Certificate in Information Design and Visualization focuses on the data-driven analytical and visual design of information, preparing students to communicate visually while engaging advanced data analytics to produce meaningful information environments.

Successful graduates of the Certificate in Information Design and Visualization are professionals who are prepared to tackle new information communication challenges and communicate and collaborate with researchers in a variety of fields, as well as stakeholders and the public. Throughout the course of the certificate, students master how to think visually, while also learning how to produce effective, meaningful visual information from various sources of data.

The certificate is intended for practitioners and graduate students from related fields—media, design, communications, data science, and more—who would like to acquire competencies in information design and data visualization to complement their skills and address their professional needs. Embedded in the course offering of our Master of Fine Arts in Information Design and Visualization (<http://www.northeastern.edu/camd/artdesign/academic-programs/mfa-in-information-design-and-visualization>) program, students in the certificate program will have the opportunity to join MFA students for activities such as attending guest lectures and workshops.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ARTG 5130	Visual Communication for Information Design	4
ARTG 5330	Visualization Technologies 1	4

Electives

Code	Title	Hours
Complete two from the following:		8
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5110	Information Design History	
ARTG 5310	Visual Cognition	
ARTG 6100	Information Design Studio 2: Dynamic Mapping and Models	
ARTG 6310	Design for Behavior and Experience	
ARTG 6320	Design of Information-Rich Environments	
ARTG 6330	Information Design Mapping Strategies	
ARTG 6900	Special Topics in Design	
ARTG 5000 or 6000 level course		

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

School of Journalism

Website (<http://www.northeastern.edu/camd/journalism>)

Jonathan Kaufman, MA
Professor and Director

102 Lake Hall
617.373.3236
617.373.8773 (fax)

Gladys Mckie, MS, Graduate Coordinator, g.mckie@northeastern.edu

Welcome to the graduate programs at Northeastern University's School of Journalism. Our school offers a Master of Arts in Journalism and a Master of Science in Media Advocacy. The Master of Arts in Journalism degree is designed to merge traditional journalism with the latest technology. Students new to the field or those with experience can choose one of two tracks—professional journalism or media innovation—to prepare them for the challenges faced by legacy and new media in the digital age. The Master of Science in Media Advocacy is designed to teach strategic advocacy skills and prepare graduates to succeed as resilient, media-empowered citizens in a global society. Moreover, these programs offer students hands-on training in preparation for careers in reporting, editing, multimedia design and production, social media, and data journalism.

As part of Northeastern's College of Arts, Media and Design, our graduate students are also part of an interdisciplinary and creative community. Our core curriculum is supplemented by electives that take advantage of course offerings from within our college and from other colleges in the university. And with our experiential education opportunities and outstanding co-op program, students do not have to wait until after graduation to begin developing skills as reporters, media advocates, or public relations professionals.

It is our goal to help you put your passion into practice. To that end, our graduate programs afford students the opportunity to study in Boston with a small and dedicated faculty of specialists with years of experience and extensive contacts in the media world.

Programs

Master of Arts (MA)

- Journalism (p. 60)

Master of Science (MS)

- Media Advocacy (p. 61)

Journalism, MA

The School of Journalism offers two pathways in a Master of Arts degree that seeks to prepare students for the challenges faced by legacy and new media in the digital age.

Students new to the field or those with experience can choose programs tailored to help them thrive during this time. Our programs are designed to merge traditional journalism with the latest information technology. Our professional track is designed for those with little or no journalism experience who want to pursue a career in journalism. Our media innovation track is designed for students with previous journalism experience who want to learn digital and multimedia skills.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
JRNL 6340	Fundamentals of Digital Journalism	4

Tracks

Complete one of the following two tracks:

PROFESSIONAL TRACK

Code	Title	Hours
JRNL 6200	Enterprise Reporting 1	4
JRNL 6201	Enterprise Reporting 2	4
JRNL 6202	Perspective on Journalism Ethics	4

MEDIA INNOVATION TRACK

Code	Title	Hours
JRNL 6306	Media Innovation Studio 1	4
JRNL 6307	Media Innovation Studio 2	4
JRNL 6341	Telling Your Story with Data	4

Electives

Code	Title	Hours
Complete 20 semester hours from the following areas:		20
JRNL 5309 to JRNL 7976		

Courses from other disciplines may be taken in consultation with your faculty advisor.

No more than two courses outside of CAMD may be taken.

Program Credit/GPA Requirements

36 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Professional Track: Sample Two Years with Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 6100	1	JRNL 6201	4	Vacation	0	Co-op	0
JRNL 6200	4	JRNL 6202	4				
JRNL 6340	4	Elective 2	4				
Elective 1	4						
	13		12		0		0

Year 2

Fall	Hours	Spring	Hours
Co-op	0	Elective 3	4
		Elective 4	4
		Elective 5	4
	0		12

Total Hours: 37

Media Innovation Track: Sample One-and-a-Half Years with No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 6340	4	JRNL 6306	4	Vacation	0	Vacation	0
JRNL 6341	4	Elective 2	4				
Elective 1	4	Elective 3	4				
	12		12		0		0

Year 2

Fall	Hours
JRNL 6307	4
Elective 4	4
Elective 5	4
	12

Total Hours: 36

Media Advocacy, MS

The Master of Science in Media Advocacy places particular focus on developing direct and indirect advocacy skills: that is, to influence government decision makers directly and to change minds indirectly through shifting public opinion. The program uniquely combines grounding in governmental structures and the legal system with sophisticated training in the latest communication techniques including social media, web communications, and videography, as well as data analytics and data-driven storytelling. Successful graduates will be empowered to promote the public agenda of employers ranging from mission-driven organizations, such as the ACLU or the Sierra Club, to industry leaders, such as hospitals and technology companies, to lobbying and strategic communications groups and political consulting firms.

Program Requirements

Core Requirements

Code	Title	Hours
JRNL 5400	Media and Advocacy in Theory and Practice	4
JRNL Advocacy Rese:(TBA)		

LW 6400	Law, Policy and Legal Argument	4
LW 7667	Law and Ethics of Advocacy	3

Electives

Code	Title	Hours
Complete 18 semester hours from the following:		18

Advocating for Change

Complete 9–12 semester hours from the following:

JRNL 6202	Perspective on Journalism Ethics
LAW 7428	State Local Government
LAW 7600	Current Issues in Health Law and Policy
LAW 7651	Human Rights in the United States
LW 7329	Environmental Law
LW 7335	Health Law
LW 7488	Sexuality, Gender and the Law
LW 7491	International Human Rights and the Global Economy

Techniques of Advocacy

Complete 9–12 semester hours from the following:

ARTD 5001	Art, Context, Action 1
ARTD 5002	Art, Context, Action 2
ARTD 5582	Collaborative Video and Community Engagement
ARTG 5100	Information Design Studio 1: Principles
ARTG 5110	Information Design History
ARTG 5310	Visual Cognition
ARTG 5330	Visualization Technologies 1
ARTG 5600	Experience Design Studio 1: Principles
ARTG 5610	Design Systems
ARTG 5620	Notational Systems for Experience
ARTG 6310	Design for Behavior and Experience
ARTG 6320	Design of Information-Rich Environments
JRNL 5310	Photojournalism
JRNL 6340	Fundamentals of Digital Journalism
LAW 7635	Laboratory Seminar in Applied Design and Legal Empowerment

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Sample One-and-a-Half Years with No Co-op

Year 1

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
JRNL 5400 Media and Advocacy in Theory and Practice	4	JRNL 5XXX Advocacy Research	4	Vacation	0	Vacation	0
LW 6400 Introduction to Law, Policy and Legal Argument	3	Elective 2	3-4				

Elective 1	3-4	Elective 3	3-4		
	10-11		10-12	0	0
Year 2					
Fall	Hours				
LW 6XXX	3				
Ethics of Advocacy					
Elective 4	3-4				
Elective 5	3-4				
Elective 6	3-4				
	12-15				
Total Hours: 32-38					

Music

Website (<http://www.northeastern.edu/camd/music>)

Daniel Strong Godfrey, PhD
Professor and Chair

351 Ryder Hall
617.373.2776
617.373.4129 (fax)
Andrew Mall, Assistant Professor and Graduate Coordinator,
a.mall@northeastern.edu

The Master of Science in Music Industry Leadership (MS.MIL) program is an intensive one-year leadership program designed for individuals who want to manage the next generation of music companies (students who choose to do a co-op typically take longer than one year to complete the MS.MIL program). The MS.MIL offers advanced education in the areas of music management, leadership, research, and entrepreneurship with opportunities for immediate and ongoing application to each student's unique professional aspiration.

The Master of Science program focuses on the core scholarly areas of music industry. Courses seek to provide a solid foundation in music industry theory and analysis while offering students the opportunity to apply the foundational skills to an area of personal interest. Elective courses emphasize the creation and sustainability of music organizations in a rapidly evolving environment. Using an active-learning approach, the program focuses on developing music executives intellectually and ethically, while providing them with a keen appreciation for the complexities of managing in the creative industries. This approach focuses on long-term skill sets that enhance the potential of graduates within a fluid and ever-changing field. The program also emphasizes global leadership qualities that provide a broader vision of the music industry on an international level.

The JD/MS in Music Industry Leadership is a dual-degree program that offers students a variety of opportunities for real-world, experiential learning at the intersection of law and music business. Candidates for the JD/MS program must independently apply and gain admission to the School of Law and the College of Arts, Media and Design. Admission to one school does not ensure admission to the other. Candidates may apply to both schools prior to matriculation at the law school, or students may wait until they are enrolled in the School of Law before seeking admission to the College of Arts, Media and Design. During either the first or second year of law school, students may apply to the MS program during the winter or spring for enrollment the following September. Students enrolled in law school who are interested in pursuing this dual degree should contact the Office of Academic and Student Affairs and

Professor Kara Swanson, JD/MS faculty advisor, during the fall or winter of their first or second year for further information.

Curriculum

The MS.MIL program requires a minimum of 33 semester hours and 11 courses with a grade-point average (GPA) of 3.000 for graduation. Under consultation with the graduate coordinator, students choose courses and other curricular options (such as co-ops, research theses, directed studies, or entrepreneurial capstones) to highlight a student's strengths and longer-term goals.

Programs

Master of Science (MS)

- Music Industry Leadership (p. 62)

Dual Degree (JD/MS)

- Music Industry Leadership (p. 63)

Certificate

- NEC/NU Joint Certificate Program—Professional Studies Certificate in Music Performance (p. 63)

Music Industry Leadership, MS

Engaged with the Industry—and the World

Leveraging Northeastern's excellence in global experiential learning, our program allows students to study in Boston and gain real-world experience in New York, Nashville, Los Angeles, and other music capitals across the world.

Expert Faculty

With real-world research and professional experience with the issues facing today's music industry, our exceptional faculty bring fresh insight and innovation to their teaching.

Options

Students shape their own curriculum, following paths that meet personal and professional aspirations through a focus on practice, entrepreneurship, the profession, and research. We also offer a joint JD/ Music Industry Leadership program in partnership with the Northeastern University School of Law.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
MUSI 6000	Management of Music Organizations	3
MUSI 6100	Music Industry Research Methodology	3
MUSI 6200	Financial Management in the Music Industry	3
MUSI 6300	Intellectual Property for Music Management	3
MUSI 6400	Marketing Strategies in the Music Industry	3

Electives

Code	Title	Hours
Complete 18 semester hours in the following subject areas: ¹		18
MUSI 5000	level or above	
AACE 6000	level or above	

Program Credit/GPA Requirements

33 total semester hours required
 Minimum 3.000 GPA required

¹ Electives in other disciplines may be taken in consultation with your faculty advisor. A maximum of 6 semester hours of electives may be taken outside the College of Arts, Media and Design.

Plan of Study

Sample One Year, No Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 6000	3	MUSI 6200	3	2 Electives	6	Elective	3
MUSI 6100	3	MUSI 6400	3				
MUSI 6300	3	2 Electives	6				
Elective	3						
		12		12		6	
						3	

Total Hours: 33

Sample Two Year, One Co-op

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 6000	3	MUSI 6200	3	2 Electives	6	Co-op	
MUSI 6100	3	MUSI 6400	3				
MUSI 6300	3	2 Electives	6				
Elective	3						
		12		12		6	
						0	

Year 2

Fall	Hours
Co-op	
Elective	3
3	

Total Hours: 33

Music Industry Leadership, JD/MS

Over the course of 45 months, the program enrolls students successively in the School of Law and the College of Arts, Media and Design. JD/MS candidates must complete the first and last years of the program in the School of Law. The year of music industry courses in the College of Arts, Media and Design may be taken during either the second or third year.

Program Requirements

Program Sequence

Year One

Fall and spring—traditional first-year law curriculum

Year Two

Summer—law co-op

Fall, winter, and spring—music industry courses (p. 62)

Year Three

Summer—music industry courses (p. 62)

Fall—law school courses

Winter—law co-op

Spring—law school courses

Year Four

Summer—law co-op

Fall—law school courses

Winter—law co-op

Spring—law school courses

Plan of Study

Year 1

Hours
Insert law school year one
0

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
MUSI 6000	3	MUSI 6200	3	2 electives	6	Elective	3
MUSI 6100	3	MUSI 6400	3				
MUSI 6300	3	2 electives	6				
Elective	3						
		12		12		6	
						3	

Year 3

Hours
Insert law school year two
0

Year 4

Fall	Hours
Insert law school year three	
0	

Total Hours: 33

NEC/NU Joint Certificate Program—Professional Studies Certificate in Music Performance

The School of Continuing Education at the New England Conservatory (NEC) and the Department of Music at Northeastern University (NU) offer a Professional Studies Certificate in Music Performance (48 credits). This program is geared toward NU undergraduate and graduate students who are interested in improving their abilities to perform on an instrument or voice in the classical or jazz styles.

The certificate in music performance is *in addition to* the student's Northeastern undergraduate or graduate degree—it is an entirely separate and distinct credential. Credits for courses toward the music performance certificate are accumulated and billed separately from credits toward Northeastern undergraduate or graduate degree programs and are not eligible for financial aid.

Courses are offered at NEC (predominantly related to music performance) and at NU (predominantly related to music history and music theory). NEC courses are scheduled during evenings and weekends.

Program Requirements

Northeastern University Requirements

Complete 22 credits of course work at Northeastern University as indicated below.

Code	Title	Hours
Music Theory and Musicianship Placement		
All students must take a theory placement exam. Students who do not place into MUSC 1201 or MUSI 1203 must first take the following course:		
MUSC 1119	Fundamentals of Western Music Theory	
Credits for MUSC 1119 do not count toward the certificate.		
Music Theory and Musicianship		
Music theory and musicianship courses should be taken concurrently. ¹		
MUSC 1201	Music Theory 1	4
MUSC 1202	Music Theory 2	4
Music in Context (Traditional, Ethnomusicological, Contemporary)		
Complete one of the following:		4
MUSC 1104		
MUSC 1105		
MUSC 1111	Rock Music	
MUSC 1112	Jazz	
Note: Since the following course is repeatable, music majors and combined majors may count the credits for the second time they take this course toward the music performance certificate:		
MUSC 3550	Historical Traditions: Special Topics	
Ensembles		
Complete 6 credits of music ensembles:		6
MUSC 1904	Chorus	
MUSC 1905	Concert Band	
MUSC 1906	Orchestra	
MUSC 1907	Wind Ensemble	
MUSC 1911	Jazz Ensemble	
MUSC 1912	Rock Ensemble	
MUSC 1913	Blues/Rock Ensemble	
MUSC 1914	Create Your Own Music	
MUSC 1915	Chamber Ensemble	
MUSC 1916	Contemporary Music Ensemble	
MUSC 1917	Jazz Choir and Combo	
MUSC 1918	World Music Ensemble	
MUSC 1919	Fusion Ensemble	
MUSC 1920	Pep Band	
MUSC 1921		

Recital Preparation and Performance		
MUSC 3410	Recital 1	1
MUSC 4622	Recital 2	1

¹ By replacing "Musicianship 1 (MUSC 1241)" with "Music Theory 2 (MUSC 1202)".

New England Conservatory Requirements

Complete 26 credits of course work at New England Conservatory School of Continuing Education as indicated below.

Code	Title	Hours
Private Studio Instruction		
Complete 16 credits of (repeatable) private studio instruction with New England Conservatory School of Continuing Education faculty. These credits may be accumulated in units of 2, 3, or 4 credits per semester. All private lessons require audition by NEC/NU faculty in order to assign private teacher placement. After being placed with a private teacher, and working with their certificate advisor, students must confirm with that teacher the length and number of lessons they will receive.		16
MPNC 1102	Music Instruction	
MPNC 1103	Music Instruction	
MPNC 1104	Music Instruction	
Music Technology		
MPNC 1201	Contemporary Music Production and Technology 1	1
Electives		
Complete 7 credits from the following:		7
MPNC 1301	Build Your Voice: Art/Skillful Singing	
MPNC 1401	Jazz Ear Training 1	
MPNC 1411	Jazz Theory 1	
MPNC 1421	Finale Chart Writing	
MPNC 1451	Jazz History 1	
MPNC 1501	Introduction to Music-in-Education	
MPNC 1612	Group Piano Class	
MPNC 1621	The Art of Musical Sight-Reading	
MPNC 1622	The Art of Practice and Performance	
MPNC 1623	Developing Perfect Pitch 1	
MPNC 1631	The Accidental Music Teacher: From Musical Artist to Creative Educator	
MPNC 1642	Sight-Singing for Singers	
MPNC 1801	Introduction to Composition 1	
MPNC 1802	Contemporary Improvisation: Skill Building	
MPNC 1803	Contemporary Improvisation: Music of the World—The African Diaspora	
MPNC 1901	Art and Soul of Cinema: An Appreciation of Film Music	
MPNC 1911	Latin American Classical Traditions 1	
MPNC 2401	Jazz Ear Training 2	
MPNC 2411	Jazz Theory 2	
MPNC 2431	Jazz Composition and Analysis	
MPNC 2451	Jazz History 2	
MPNC 2511	Music-in-Education Seminar	

MPNC 2512	Models for Teaching and Learning for Music-in-Education
MPNC 2525	Art and Science of Assessing Music Learning
MPNC 2526	Music, Brain Development, and Learning
MPNC 2547	Cross-Cultural Alternatives for Music-in-Education
MPNC 2548	Teaching and Learning with Music Technology
MPNC 2556	Improvisation in Music Education
MPNC 2561	String Pedagogy
MPNC 2571	Performing Artists in Schools
MPNC 2601	Music Production for Media
MPNC 2612	Piano Pedagogy
MPNC 2623	Developing Perfect Pitch 2
MPNC 2624	Advanced Perfect Pitch
MPNC 2644	Bach Arias for Singers and Instrumentalists
MPNC 2801	Introduction to Composition 2
MPNC 2911	Latin American Classical Traditions 2
MPNC 3401	Jazz Ear Training 3
MPNC 3411	Jazz Theory 3
MPNC 3431	Jazz Arranging
MPNC 3611	Piano Interpretation/Performance Seminar
MPNC 3631	18th-Century Tonal Counterpoint
MPNC 3633	Modal Counterpoint
MPNC 3641	Dramatic Coaching of Songs and Arias
MPNC 3643	Vocal Repertoire: Coaching and Performance
MPNC 3801	Composition Seminar 1
MPNC 3802	Composition Seminar 2
MPNC 4401	Jazz Ear Training 4
MPNC 4411	Jazz Theory 4
MPNC 4581	Music-in-Education Guided Internship
MPNC 4591	Music-in-Education Portfolio

Ensembles

Complete two music ensembles:	2
MPNC 1712	Baroque Ensemble
MPNC 1713	NEC Voices: A New Choral Experience
MPNC 1714	Renaissance Ensemble
MPNC 1716	Contemporary Improvisation Ensemble: Walking between Worlds
MPNC 1721	Guitar Ensemble 1
MPNC 1731	Jazz Ensemble
MPNC 1741	Chamber Music Ensemble
MPNC 1742	Chamber Music Duo
MPNC 1751	Vocal Chamber Music
MPNC 1771	Improvisation and Composition Ensemble
MPNC 1781	Medieval Folk Roots Ensemble
MPNC 3642	Opera Ensemble Skills

Interdisciplinary Programs

The “space between our disciplines” is intellectually rich, educationally vibrant, and professionally productive. Our interdisciplinary degree options provide a strong foundation of use-inspired, experientially informed course work and research opportunities. Our programs are designed to produce graduates equipped to engage the international marketplace and shape global culture.

Programs

Master of Science

- Arts Administration and Cultural Entrepreneurship (p. 65)
- Urban Planning and Policy (p. 66)

Graduate Certificate

- Arts Administration (p. 69)
- Cultural Entrepreneurship (p. 69)

Arts Administration and Cultural Entrepreneurship, MS

The arts and cultural industries are key drivers of each nation's economy, contributing more than \$730 billion annually in the United States alone. While the economic impact of the arts and cultural industries can be measured, their social impacts are often underestimated. Music, dance, visual art, and theatre are critical to how we perceive, interpret, and critique the world and people around us. The arts articulate our beliefs, politics, familial and community ties, and history.

Arts administrators are the bridge between creative practitioners and audiences and between arts institutions and supportive stakeholders. In today's digitally driven, highly competitive, and increasingly global economy, traditional institutions for visual and performing arts face critical sustainability challenges. Leaders in the arts must adopt the creative thinking and problem-solving skills of an entrepreneur in order to envision new models for creative practice, audience engagement, and funding.

The interdisciplinary Master of Science in Arts Administration and Cultural Entrepreneurship (AACE) prepares arts leaders to both convey the human necessity of creative expression and apply creative thinking to manage resources, inspire audience engagement, and sustain financial support. The arts, and audience opportunities to experience them, are more dynamic and diverse than ever before, flourishing in major arts institutions as well as non-hierarchical organizations, from artist-run spaces and community organizations to annual festivals and pop-up exhibitions. It is time for a transformation in leadership training that matches the ingenuity of today's most exciting experiments in music, dance, theatre, and the visual arts. Arts leaders must also be equipped with the administrative, analytical, and technological skill sets necessary to excel within the complex, interdependent arts ecosystem.

The AACE curriculum is designed to meet the changing needs of arts leaders, from administrators in arts institutions to creative practitioners and entrepreneurs eager to make their art startup a reality. The program focuses on leadership innovation in a range of performance, visual arts, and cultural organizations. As an intellectual and practical course of study that merges the expertise of academics, creative professionals, administrators, and entrepreneurs, the program's aim is to support sustainable creative practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Arts Administration Foundation		
AACE 6000	Arts and Culture Organizational Leadership	3
AACE 6010	Planning for Arts and Cultural Organizations	3
AACE 6020	Experiential Study in Arts Administration	3
Cultural Entrepreneurship Foundation		
AACE 6200	Programming and Community Engagement for Cultural Entrepreneurs	3
AACE 6210	Building Value Through Cultural Enterprise	3
AACE 6220		3

Electives

Code	Title	Hours
Arts Administration Directed Elective		
AACE 6110	Information Technology for Arts and Cultural Organizations	3
Cultural Entrepreneurship Directed Elective		
Complete one of the following:		3
ENTR 6212	Business Planning for New Ventures	
ENTR 6210	Managing Operations in Early Stage Ventures	
ENTR 6214	Social Enterprise	
ENTR 6216	Global Social Entrepreneurship and Innovation	
ENTR 6218	Business Model Design and Innovation	
TECE 6222	Emerging and Disruptive Technologies	
TECE 6250	Lean Design and Development	
Experiential Electives in Arts Leadership		
Complete two of the following courses not taken to fulfill above requirements:		6
AACE 6100		
AACE 6120		
ARTG 6310	Design for Behavior and Experience	
MUSI 5540	Special Topics in Music Industry	
MUSI 6000	Management of Music Organizations	
MUSI 6300	Intellectual Property for Music Management	
MUSI 6400	Marketing Strategies in the Music Industry	

Program Credit/GPA Requirements

30 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Sample Plans of Study:

One Year

Year 1					
Fall	Hours	Spring	Hours Summer 1	Hours	
AACE 6000		3 AACE 6020		3 Cultural entrepreneurship directed elective	3
AACE 6010		3 AACE 6220		3 Experiential elective 2	3
AACE 6200		3 Arts administration directed elective		3	
AACE 6210		3 Experiential elective 1		3	
		12		12	6
Total Hours: 30					

One and a Half Years

Year 1			
Fall	Hours	Spring	Hours
AACE 6000		3 AACE 6020	3
AACE 6010		3 AACE 6220	3
AACE 6200		3 Arts administration directed elective	3
AACE 6210		3	
		12	9
Year 2			
Fall	Hours		
Cultural entrepreneurship directed elective	3		
Experimental elective 1	3		
Experiential elective 2	3		
		9	
Total Hours: 30			

Urban Planning and Policy, MS

The Master of Science in Urban Planning and Policy (MUPP) program trains leaders interested in building just and sustainable solutions to today's critical urban problems, including challenges of affordable housing provision, equitable and sustainable economic growth, sustainable transportation, and climate change adaptation and mitigation. This innovative program combines the expertise in urban planning and policy analysis and data analytics of the School of Public Policy and Urban Affairs with expertise in physical planning, design, and data visualization at the School of Architecture. The core curriculum of the program provides students with a solid foundation in essential skills and concepts, including research design and statistics, economic analysis, legal foundations of urban planning and policy, and the history of urban development and urban planning. Students also have the opportunity to develop substantial expertise in a specialization area, including urban analytics, urban sustainability and resilience, urban

design and physical planning, and urban development policy and planning.

The optional cooperative education experience (co-op) is available to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

In addition to the co-op option, students in the MUPP program have opportunities to gain experience in the application of their knowledge and skills via internships, class projects, and a capstone research report. They graduate prepared for careers working for state and local government, federal agencies, community development corporations and other nonprofit organizations, research institutes, and as private-sector planning consultants.

This program is not accepting applicants until spring 2019.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Planning and Policy		
LPSC 5201		4
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	4
PPUA 6502	Economic Institutions and Analysis	4
SUEN 6340	Topics in Urban Environmental Design	4
Research Design		
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	4
Quantitative Techniques		
Students in the urban analytics focus area are encouraged to take PPUA 5301.		
Choose one from the following:		4
LPSC 7305	Research and Statistical Methods	
or INSH 6500	Statistical Analysis	
or POLS 7202	Quantitative Techniques	
or PPUA 5301	Introduction to Computational Statistics	

Focus Areas

Complete one of the following focus areas:

- Urban Design and Physical Planning (p. 67)
- Urban Analytics (p. 67)
- Sustainability and Resilience (p. 67)
- Urban Development Policy and Planning (p. 68)

URBAN DESIGN AND PHYSICAL PLANNING

Code	Title	Hours
Gateway Course		
ARCH 6340	Graduate Topics in Architecture	4
Tracks		
Complete one of the following tracks:		8
<i>Urban Design and Real Estate</i>		
ARCH 5310	Design Tactics and Operations	
ARCH 5530	Innovative Models in Real Estate Development and Design	
<i>Physical Planning and Design for Sustainable Urbanism</i>		
SUEN 7230	Urban Ecologies and Technologies 1	
SUEN 7240	Urban Ecologies and Technologies 2	
<i>Urban Experience Track</i>		
ARTG 5150	Information Visualization Principles and Practices	
ARTG		
Capstone		
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	6

URBAN ANALYTICS

Code	Title	Hours
Gateway Course		
PPUA 5262	Big Data for Cities	4
Required Courses		
ARTG 5150	Information Visualization Principles and Practices	4
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4

SUSTAINABILITY AND RESILIENCE

Code	Title	Hours
Gateway Course		
LPSC 7312	Cities, Sustainability, and Climate Change	4
or SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory	
Methods		
Complete one of the following:		4
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
SUEN 7230	Urban Ecologies and Technologies 1	
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Elective		
Complete one of the following:		4
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 7231	Transportation Policy	

PPUA 7234	Land Use and Urban Growth Policy
PPUA 7249	Urban Coastal Sustainability
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems
SUEN 6220	Implementation and Visualization for Urban Environments 2
SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory
SUEN 6340	Topics in Urban Environmental Design
SUEN 7230	Urban Ecologies and Technologies 1
SUEN 7240	Urban Ecologies and Technologies 2
SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments

URBAN DEVELOPMENT POLICY AND PLANNING

Code	Title	Hours
Gateway Course		
Complete one of the following:		4
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7233	Contemporary Community Development	
Methods		
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
or PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers	
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Elective		
Complete one of the following:		4
PPUA 5270	Food Systems and Public Policy	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6530	State and Local Public Finance	
PPUA 6551	Nonprofit Organizations and Social Change	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7232	Immigration and Urban America	
PPUA 7233	Contemporary Community Development	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers	
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites	
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	
SUEN 6340	Topics in Urban Environmental Design	

Electives

Code	Title	Hours
Complete two of the following:		8
ARCH 5310	Design Tactics and Operations	

ARCH 5530	Innovative Models in Real Estate Development and Design
ARCH 6100	Graduate Skills Studio
ARCH 6330	Seminar in Modern Architecture
ARCH 6340	Graduate Topics in Architecture
ARTG 5100	Information Design Studio 1: Principles
ARTG 5120	Research Methods for Design
ARTG 5130	Visual Communication for Information Design
ARTG 5330	Visualization Technologies 1
ARTG 6330	Information Design Mapping Strategies
DA 5020	Collecting, Storing, and Retrieving Data
DA 5030	Introduction to Data Mining/Machine Learning
PPUA 5260	Ecological Economics
PPUA 5261	Dynamic Modeling for Environmental Decision Making
PPUA 5263	Geographic Information Systems for Urban and Regional Policy
PPUA 5270	Food Systems and Public Policy
PPUA 5302	Information Design and Visual Analytics
PPUA 6506	Techniques of Policy Analysis
PPUA 6530	State and Local Public Finance
PPUA 6551	Nonprofit Organizations and Social Change
PPUA 7245	Education Policy in the United States
PPUA 7230	Housing Policy
PPUA 7231	Transportation Policy
PPUA 7232	Immigration and Urban America
PPUA 7233	Contemporary Community Development
PPUA 7234	Land Use and Urban Growth Policy
PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers
PPUA 7237	Advanced Spatial Analysis of Urban Systems
PPUA 7249	Urban Coastal Sustainability
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems
SUEN 6210	Implementation and Visualization for Urban Environments 1
SUEN 6220	Implementation and Visualization for Urban Environments 2
SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory
SUEN 6340	Topics in Urban Environmental Design
SUEN 7230	Urban Ecologies and Technologies 1
SUEN 7240	Urban Ecologies and Technologies 2
SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

48 total semester hours required (50 with optional co-op)
Minimum 3.000 GPA required

Arts Administration, Graduate Certificate

Today's arts sector is more vital and dynamic than ever, flourishing in both arts institutions and "non-hierarchical organizations," from artist-run spaces to community organizations. This context, paired with changes in the funding climate over the past 30 years, has generated a need to transform leadership training in the arts. Creative thinkers must be equipped with administrative, analytical, entrepreneurial, and technological skill sets to work within the complex, interdependent arts and cultural ecosystem.

The **Graduate Certificate in Arts Administration** offers an interdisciplinary graduate program focused on leadership innovation in performance, visual arts, cultural, and community organizations.

The Graduate Certificate in Arts Administration challenges students to create diverse, viable, and sustainable arts and culture projects and organizations; to use entrepreneurial practices in order to create transformation; to develop and deploy new arts and culture sector-focused business and analytic skills; and to design innovative planning and engagement strategies. Course and project work embeds experiential opportunities to explore and demonstrate transformational arts management approaches.

The required curriculum includes three core and one directed elective for a total of 12 credit hours. All courses can be completed online.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
AACE 6000	Arts and Culture Organizational Leadership	3
AACE 6010	Planning for Arts and Cultural Organizations	3
AACE 6020	Experiential Study in Arts Administration	3

Elective

Code	Title	Hours
Complete one of the following:		3
AACE 6110	Information Technology for Arts and Cultural Organizations	
AACE 6200	Programming and Community Engagement for Cultural Entrepreneurs	

AACE 6210	Building Value Through Cultural Enterprise (Building Value through Cultural Enterprise)
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Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Cultural Entrepreneurship, Graduate Certificate

Cultural entrepreneurs combine their passion for creative and cultural products and programs with creative, out-of-the-box thinking to forge the resilience of the arts sectors and the wider communities they serve. Cultural entrepreneurs employ innovative approaches to audience engagement – like a roving theater company, pop-up museum, or a smartphone app for artistic collaboration – to deliver artistic value to wide and diverse audiences and make a positive social, environmental, and economic impact. Today's cultural entrepreneurs operate in diverse professional environments, from consulting for organizational transformation to launching a creative startup. By understanding community impacts and activating a range of cultural and creative experiences, cultural entrepreneurs play a crucial role in ensuring the vitality of artistic engagement, advancing community goals, and strengthening society.

The **Graduate Certificate in Cultural Entrepreneurship** empowers students with a critical, creative perspective on arts programming and management and a myriad of creative management tools that harness new technologies for artistic engagement.

The Graduate Certificate in Cultural Entrepreneurship offers an interdisciplinary program to create diverse and viable projects and organizations for artistic experience and positive social impact. The program prepares students to become innovators in a range of artistic and cultural disciplines, from music, visual art, theater, and dance to community-building and transformation. The curriculum offers students the opportunity to identify opportunities for evolution in the arts and cultural sectors and to develop critical, creative practices; leadership acumen; and skill sets in arts management, strategic planning, and performance analysis to conceive and implement creative, cultural programming for community engagement and positive impact.

The program learning objectives provide students with opportunities to:

- Develop an understanding of methods and tools used to conceptualize, scope, pilot, evaluate, iterate and launch cultural entrepreneurship projects;
- Align creative practice and arts enterprise strategies with opportunities, challenges and resources to achieve desired impact;
- Apply communication, engagement and evaluation techniques to develop and sustain diverse audiences and stakeholder relationships;
- Engage in critical analysis of the work of peers and industry leaders by analyzing and contextualizing the quality, viability and sustainability of culturally-driven entrepreneurship.

The required curriculum includes three core courses and one directed elective for a total of 12 credit hours. All courses can be completed online.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
AACE 6200	Programming and Community Engagement for Cultural Entrepreneurs	3
AACE 6210	Building Value Through Cultural Enterprise (Building Value through Cultural Enterprise)	3
AACE 6220	(Experiential Study in Cultural Entrepreneurship)	3

Elective

Code	Title	Hours
Complete one of the following:		3
AACE 6000	Arts and Culture Organizational Leadership	
AACE 6010	Planning for Arts and Cultural Organizations	
AACE 6110	Information Technology for Arts and Cultural Organizations	
ENTR 6212	Business Planning for New Ventures	

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

D'Amore-McKim School of Business

Website (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=mofu)

Raj Echambadi, PhD, Dunton Family Dean

Emery A. Trahan, PhD, Senior Associate Dean of Faculty and Research

Jeffrey A. Born, PhD, Associate Dean of Undergraduate Programs

Kate E. Klepper, MBA, Associate Dean of Graduate Programs

Maureen Underhill, MEd, Associate Dean of Finance and Administration

D'Amore-McKim School of Business

360 Huntington Avenue
350 Dodge Hall
Boston, MA 02115-5000
617.373.5992

Boston campus Graduate Degrees: gradbusiness@northeastern.edu
Online MBA, Online MS in Finance, Online MS in Taxation: onlinegradbusiness@northeastern.edu
Boston campus Graduate Certificates: gradcertificates@northeastern.edu
Online Graduate Certificates: onlinegradbusiness@northeastern.edu
MS in Business Analytics: j.pierce@northeastern.edu
MS in International Management: igaul.ipbs@gmail.com

Graduate School of Professional Accounting

360 Huntington Avenue
412 Dodge Hall
Boston, MA 02115-5000
617.373.3244
gspa@northeastern.edu

The D'Amore-McKim School of Business offers a unique model of business education that purposefully blends innovative classroom learning with real-world business application. Its students explore cutting-edge theory with professors, fusing knowledge with learning experiences that include cooperative education or corporate residency (six-month, full-time paid work assignments), study abroad, and community service. The school's resulting connections with the corporate world influence its research agendas, which, in turn, shape innovative new business practice. This synergy enables D'Amore-McKim students to become successful business leaders who are both thinkers and doers and, thus, highly qualified to think critically and leave their mark on the global business world.

Graduate students can choose from a number of different full-time and part-time MBA and MS programs and graduate certificates (both residential and online) designed to enable motivated professionals to accelerate their success in business. The school's approach reflects a commitment to embedding a global mind-set into all of these programs, as well as in its research and outreach activities.

Master of Science

At D'Amore-McKim School of Business, we designed our master's in business programs to prepare students for a rich and challenging career in the evolving 21st-century business world. If you are looking to expand your experience and broaden your professional horizons, we offer graduate business programs in multiple areas of study to provide you with the focused education needed to advance your career.

Accelerate your career whether it's pursuing your ideal profession or advancing in your current field with a degree in:

- Accounting
- Business analytics
- Finance
- Innovation and entrepreneurship
- International management and business
- Taxation

Programs

Master of Science (MS)

- Business Analytics (p. 71)
- Innovation (p. 72)
- International Management (p. 72)
- Technological Entrepreneurship (p. 73)

Master of Science in Accounting (MSA)

- Accounting (p. 73)

Master of Science in Finance (MSF)

- Finance (p. 74)
- Finance—Evening/Part-Time Program (p. 75)
- Finance—Online Program (p. 75)

Master of Science in International Business (MSIB)

- International Business (p. 75)

Master of Science in Taxation (MST)

- Taxation (p. 76)
- Taxation—Online Program (p. 76)

Business Analytics, MS

Businesses are looking for professionals who can connect the dots and build successful marketing strategies based on massive amounts of structured and unstructured data. Become one of them with our Master of Science in Business Analytics (<http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/business-analytics>) degree with a marketing focus.

This program addresses a critical need for those who can interpret and apply data in an increasingly competitive and technology-driven business environment. Core courses will introduce you to data analytics concepts, and our marketing track courses will build upon this foundation to emphasize the practice-oriented application of business analytics.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
MISM 6200	Introduction to Business Analytics	3
MISM 6202	Foundations of Data Analysis for Business	3
MISM 6203	Business Analytics Methods	3
MISM 6210	Information Visuals and Dashboards for Business	3
MISM 6212	Data Mining and Machine Learning for Business	3
MISM 6213	Business Information Design, Quality, and Strategy	3
MISM 6214	Business Analytics Capstone	3
Marketing		
MKTG 6232	Engaging Customers and Markets	3
MKTG 6294	Customer-Centric Research Methods for Marketing	3
MKTG 6295	Customer Performance Modeling	3

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Innovation, MS

The Master of Science in Innovation is a part-time program, offered on Northeastern University's Boston campus and 100 percent online. The program is designed specifically for working professionals who want to become innovation leaders. Through project work, case studies, and real-world application, possibly at your own organization, you will study the principles of innovation from multiple perspectives. You'll have an opportunity to learn about product and service development, financing innovation, go-to-market strategies, lean development, managing high-performance teams, and more.

Build expertise in:

- Next-generation product, system, and service design
- Designing and leading innovation teams
- Reinventing business processes and introducing change
- Exploring new business models and ventures
- Selling new products and services

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/innovation?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msi-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
Complete one of the following:		3

On-campus only

BUSN 6280	How Executives Shape and Lead Innovation and Enterprise Growth	
<i>Online Only</i>		
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
Accounting and Finance		
ACCT 6280	Planning and Budgeting for Innovation	3
FINA 6284	Financing Innovation and Growth	3
Entrepreneurship		
ENTR 6217	Lean Innovation	3
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets	3
Management		
HRMG 6280	The Human Side of Innovation	3
MGMT 6280	Innovation for Next-Generation Products and Systems	3
MGSC 6281	Service Innovation and Management	3
Marketing		
MKTG 6280	Gaining Customer Insight	3
MKTG 6283	Marketing and Selling Innovation	3

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

International Management, MS

The MS in International Management is a full-time program that allows students to **live, study, and learn in two countries**. This master's program is available in single and double degree options. With a curriculum focusing on topics ranging from international trade to globalization of the world economy, the MS in International Management is designed to help young professionals thrive in today's international marketplace.

The **Single Degree MS in International Management** is a one-year global management program designed for young professionals. You may elect to study at D'Amore-McKim for either your fall or spring semester and at a partner business school in a different country for the other term. This master's program is collaboratively offered by six leading international business schools through the International Partnership of Business Schools (<https://ipbsmim.com>) (IPBS). The classes always start in fall. The length of the program varies depending on your choice of schools and their thesis requirements. D'Amore-McKim does not require a thesis, but you may elect to complete one in lieu of an elective course.

The **Double Degree MS in International Management** is an 18-month, challenging program that attracts high caliber students from around the world. You may elect to study at D'Amore-McKim for either your fall or spring semester and at NEOMA Business School (<http://www.reims-ms.fr/fusion>) for the other term. The classes always start in fall. After completing one semester of study on each campus, preparing a thesis for NEOMA, and undertaking a experiential learning opportunity (project work in the U.S. or a six-month internship in the European Union), you will graduate with degrees from both business schools.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/international-management?utm_source=neu-course-

catalog&utm_medium=referral&utm_campaign=mim-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required core		
FINA 6209	Introduction to International Accounting and Finance	3
INTB 6226	Becoming a Global Leader	3
INTB 6260	Advanced Topics in Global Management and Strategy	3
MGSC 6209	Business Statistics	3

Electives

Code	Title	Hours
Complete six electives from the following: 18		
ENTR 6200	Enterprise Growth and Innovation	
ENTR 6220	Family Business Leadership and Governance	
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
FINA 6204	International Finance Management	
INTB 6201	International Business Management	
INTB 6232	Doing Business in Emerging Markets	
MECN 6203	Global Managerial Economics	
MKTG 6206	International Marketing	
SCHM 6213	Global Supply Chain Strategy	
STRT 6210	Workforce Metrics and Analytics	

Program Credit/GPA Requirements

30 total semester hours required
Minimum GPA 3.000 required

Plan of Study

Year 1			
Fall	Hours	Spring	Hours
FINA 6209	3	INTB 6226	3
MGSC 6209	3	INTB 6260	3
Complete three electives from the following:	9	Complete three electives from the following:	9
INTB 6201		FINA 6204	
MECN 6203		ENTR 6200	
MKTG 6206		STRT 6210	
ENTR 6220		SCHM 6213	
ENTR 6225		INTB 6232	
		15	15

Total Hours: 30

Technological Entrepreneurship, MS

To achieve success, you need more than just a good idea. You need entrepreneurial know-how to create new product lines and services from innovations, strong business models, go-to-market strategies, and business plans for investors. The Master of Science in Technological Entrepreneurship (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/technological-entrepreneurship?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=mste-mofu) offers an immersion in the frameworks and methods needed for successful entrepreneurship.

You will be encouraged to start companies and help coach other startups within our on-campus accelerator, IDEA. IDEA supports more than 200 student and alumni ventures at any given time, with about one venture launched as a funded or self-sustaining company each month.

Our Master of Science in Technological Entrepreneurship program will strengthen your personal network, provide exposure to Boston's ecosystem and its technology companies, and help you plan and start your own company. Our teaching faculty have deep expertise in innovation, marketing, and finance, and many of the teachers have started their own companies.

The Master of Science in Technological Entrepreneurship is offered in both a full- and part-time options.

Program Requirements

Core Requirements

Code	Title	Hours
Entrepreneurship		
ENTR 6200	Enterprise Growth and Innovation	3
ENTR 6212	Business Planning for New Ventures	3
ENTR 6218	Business Model Design and Innovation	3
ENTR 6219	Financing Ventures from Early Stage to Exit	3
Technology		
TECE 6222	Emerging and Disruptive Technologies	3
TECE 6230	Entrepreneurial Marketing and Selling	3
TECE 6250	Lean Design and Development	3
TECE 6300	Managing a Technology-Based Business	3
TECE 6340	The Technical Entrepreneur as Leader	3

Elective

Code	Title	Hours
Complete 3 semester hours from the following subject areas: 3		
ACCT, BUSN, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, STRT, or TECE		

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Accounting, MSA

Heading for a great career in public accounting? You want to get there as soon as possible. With our MS in Accounting (<http://www.damore-mckim.northeastern.edu/academic-programs/>

graduate-programs/ms/accounting?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msa-mofu), you will prepare to sit for the CPA exam in just seven months. Our program is approved by the Board of Public Accountancy in Massachusetts.

Your success will begin in the classroom. Our faculty includes a number of CPAs, many of whom are former partners in national and regional CPA firms. They are currently active consultants in the business community, ready to present you with real-world public accounting issues and challenges.

What's more, our audit and tax track offerings allow you to specialize your studies even further. In the audit track, students take courses geared toward being a professional in the audit and assurance industry. This means extensive exposure to ethics, auditing research, forensic accounting, and a detailed understanding of the industry environment. In the tax track, students are exposed to the intricacies of the tax industry with detailed course work and experience with tax research and communications, state and local taxation, income tax accounting, and international taxation.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Accounting		
ACCT 6203	Business Entity Taxation	3
ACCT 6204	Financial Reporting for Integrated Multinational Enterprises	3
ACCT 6229	Accounting for Foreign Currency Transactions	1
Ethics		
ACCT 6253	Ethics in the Accounting Profession	3
Financial Reporting		
ACCT 6207	Contemporary and Emerging Issues in Financial Reporting	3
ACCT 6216	Financial Reporting for Governments and Nonprofit Entities	2

Tracks

Complete one of the following tracks:

AUDIT TRACK

Code	Title	Hours
Required Core		
ACCT 6205	Auditing in a Big Data Environment	3
ACCT 6217	Corporate Governance, Ethics, and Financial Reporting	3
ACCT 6254	Accounting Research and Communication	3
Electives		
Note: An alternative course may be substituted for one of the courses listed below with the approval of the program administrator.		
ACCT 5255	Forensic Accounting	3
ACCT 5256	Internal Auditing	3

TAXATION TRACK

Code	Title	Hours
Required Core		
ACCT 6231	Corporations and Shareholders	3
ACCT 6235	Partners and Partnerships	3
ACCT 6254	Accounting Research and Communication	3

Electives

Complete 6 semester hours from the following: 6

Note: An alternative course may be substituted for one of the electives listed below with the approval of the program administrator.

ACCT 6239	State and Local Taxation
ACCT 6240	International Taxation: Inbound Transactions
ACCT 6246	Retirement Plans
ACCT 6248	Income Taxation of Trusts and Estates

Program Credit/GPA Requirements

30 total semester hours required

Minimum 3.000 GPA required

Finance, MSF

It's time to make a short-term investment in yourself, for long-term returns. We will prepare you to take your place among global financial leaders tackling real-world challenges.

Our full-time Master of Science in Finance (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/finance?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msf-mofu) offers rigorous training in finance, helping you to develop strong analytic and problem-solving skills that will set you apart from other professionals in the market. At our program's core is a top-tier curriculum that consists of challenging course work, real-world applications, and a commitment to ethics.

You will learn firsthand from distinguished faculty dedicated to your success. You will gain the confidence in yourself to be a financial leader, determining how your company will meet its strategic goals.

The full-time Master of Science in Finance is a 12-month program that has a strong emphasis on quantitative methods and finance theory. Students complete a lockstep curriculum together as a cohort.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
FINA 6201	Financial Theory and Policy	3
FINA 6202	Analysis of Financial Institutions and Markets	3
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3

Optional

BUSN 6200	Career Management
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Electives

Code	Title	Hours
Complete four electives (course offerings are at the discretion of the finance department):		12

FINA 6211	Financial Risk Management
FINA 6212	Fixed Income Securities and Risk
FINA 6214	Mergers and Acquisitions
FINA 6217	Real Estate Finance and Investment
FINA 6219	Portfolio Management
FINA 6231	Disrupting the Finance and Insurance Service Industries
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity
FINA 6292	Advanced Topics in Finance

Program Credit/GPA Requirements

30 total semester hours required

Minimum 3.000 GPA required

Finance—Evening/Part-Time Program, MSF

It's time to make a short-term investment in yourself, for long-term returns. We will prepare you to take your place among global financial leaders tackling real-world challenges.

Our part-time MS in Finance (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/finance?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msf-mofu) offers rigorous training in finance, helping you to develop strong analytic and problem-solving skills that will set you apart from other professionals in the market. At our program's core is a top-tier curriculum that consists of challenging course work, real-world applications, and a commitment to ethics.

You will learn firsthand from distinguished faculty dedicated to your success. You will gain the confidence in yourself to be a financial leader, determining how your company will meet its strategic goals.

The part-time Master of Science in Finance program provides flexibility for working professionals seeking to brush up on their finance skills and advance in their current roles.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
FINA 6201	Financial Theory and Policy	3
FINA 6202	Analysis of Financial Institutions and Markets	3
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3

Electives

Code	Title	Hours
Finance Electives		
Complete 9 semester hours of FINA courses.		9
Business Elective		
Complete 3 semester hours in one of the following subject areas. Note that this course may be a finance course: ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, or STRT		3

Program Credit/GPA Requirements

30 total semester hours required

Minimum 3.000 GPA required

Finance—Online Program, MSF

The practice-oriented curriculum of Online Master of Science in Finance explores a comprehensive range of relevant financial topics. Designed to serve the needs of working professionals in the finance field, this 30-credit-hour program—which includes six core courses and four electives—can be completed entirely online in as few as 16 months. Students in the Online MS in Finance are classified as part-time and participate in one course at a time, completing core courses in the first year and capstone and elective courses in the second year.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
FINA 6201	Financial Theory and Policy	3
FINA 6202	Analysis of Financial Institutions and Markets	3
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3

Electives

Code	Title	Hours
Complete 12 semester hours in the following range:		12
FINA 6211 to FINA 6219		

Program Credit/GPA Requirements

30 total semester hours required

Minimum 3.000 GPA required

International Business, MSIB

The Master of Science in International Business (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/international-business?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msib-mofu) is designed to expose talented, driven students to the global business environment that will distinguish them as they enter the workforce. This program offers the opportunity to learn in the heart of Boston, home to one of the

largest, most vibrant, and highly regarded global marketplaces in the United States.

Successful graduates of this master's program will be culturally sensitive, with an international orientation, business acumen, and the analytic skills needed to best be prepared to navigate an increasingly interconnected and fast-paced world. You will have an opportunity to develop critical skills to handle the opportunities and challenges in organizations and businesses operating internationally.

The Master of Science in International Business offers both a full- and part-time option.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
FINA 6204	International Finance Management	3
FINA 6209	Introduction to International Accounting and Finance	3
INTB 6200	Managing the Global Enterprise	3
INTB 6226	Becoming a Global Leader	3
MECN 6203	Global Managerial Economics	3
MKTG 6206	International Marketing	3
SCHM 6213	Global Supply Chain Strategy	3
International Field Study		
INTB 6230	International Field Study	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following subject areas:		6
ACCT, BUSN, ENTR, FINARMG, INTSTRT, TECEB, MECN, MKTG, MGMT, MGSC, SCHM, Students may also consider political science or sociology courses.		

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Taxation, MST

The next step in your taxation career.

Always changing and increasingly complex, the issue of taxes demands a professional who can confidently advise executives and organizations on a wide range of critical issues. Our Master of Science in Taxation (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/ms/taxation?utm_source=new-course-catalog&utm_medium=referral&utm_campaign=mst-mofu) program meets this demand head-on with a sharp focus on preparing professionals who are ready to step up and put their expertise into action.

This program is ideal for those with an accounting or tax background seeking career progression as advisors and consultants, executives in public and private enterprises, and leaders in the field of taxation. As you sharpen your technical skills and command of current tax legislation, you learn how to research and navigate the current Internal Revenue

Code and other tax platforms and anticipate and respond to changes in regulation.

Courses are taught by leading professionals currently working in taxation, finance, and accounting. They bring a deep level of seasoned expertise to the courses they teach. In fact, many of our faculty are partners and managers at competitive firms. As they work with you one-on-one, you have an opportunity to gain a deep understanding of the relevant, practical insights that drive the industry today.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ACCT 5230	Federal Tax Issues and Analysis	3
ACCT 5232	Estate and Gift Taxation	3
ACCT 6231	Corporations and Shareholders	3
ACCT 6233	Tax Research Methodology	1.5
ACCT 6234	Tax Practice, Procedure, and Ethics	1.5
ACCT 6235	Partners and Partnerships	3

Electives

Code	Title	Hours
Complete 15 semester hours from the following:		15
ACCT 6236	Reorganizations	
ACCT 6238	Income Tax Accounting	
ACCT 6239	State and Local Taxation	
ACCT 6240	International Taxation: Inbound Transactions	
ACCT 6241	International Taxation: Outbound Transactions	
ACCT 6243	Advanced Flow-Through Entities	
ACCT 6246	Retirement Plans	
ACCT 6248	Income Taxation of Trusts and Estates	
ACCT 6249	Financial Planning for Investments	
ACCT 6250	Financial Planning for Insurance	
ACCT 6262	Advanced Topics in Accounting	
ACCT 6264	Planning for Estate Tax Issues	
ACCT 6265	Tax Accounting for Income Taxes	

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Taxation—Online Program, MST

Our Online Master of Science in Taxation has been specifically designed and structured for working professionals like you. To accommodate your schedule, there are six start dates available throughout the year, so you can get started at your convenience. Students in the Online Master of Science in Taxation are classified as part-time and participate in one course at a time, completing core courses in the first year and elective courses in the second year.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ACCT 5230	Federal Tax Issues and Analysis	3
ACCT 5232	Estate and Gift Taxation	3
ACCT 6231	Corporations and Shareholders	3
ACCT 6235	Partners and Partnerships	3
ACCT 6292	Tax Research, Practice, and Ethics	3

Electives

Code	Title	Hours
Complete 15 semester hours from the following:		15
ACCT 6239	State and Local Taxation	
ACCT 6240	International Taxation: Inbound Transactions	
ACCT 6241	International Taxation: Outbound Transactions	
ACCT 6243	Advanced Flow-Through Entities	
ACCT 6246	Retirement Plans	
ACCT 6248	Income Taxation of Trusts and Estates	
ACCT 6249	Financial Planning for Investments	
ACCT 6250	Financial Planning for Insurance	
ACCT 6264	Planning for Estate Tax Issues	
ACCT 6265	Tax Accounting for Income Taxes	

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Master of Business Administration

At the D'Amore-McKim School of Business, our global view guides us. The integration of academics with authentic experiential learning is fast becoming the proven method for developing essential skills to meet today's business demands. D'Amore-McKim was built on a foundation of this very approach to business education, which was pioneered by Northeastern University.

It's this approach that frames our unique MBA programs. Whether you choose to study full-time, part-time, or online, an MBA from D'Amore-McKim will offer distinctive opportunities for study and work across the country and around the world.

Programs

- MBA—Full-Time Program (p. 77)
- MBA—Part-Time Program (p. 80)
- MBA—Online Program (p. 83)

Business Administration, MBA—Full-Time Program

As the business world undergoes more and more complex changes, you need the expertise and insight to keep up—and keep ahead. You'll gain that knowledge with an MBA program that offers both academic rigor and valuable experience. Our Full-Time MBA (<http://www.damore-mckim.northeastern.edu/academic-programs/>

graduate-programs/mba/full-time?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=ftmba-mofu) delivers the proficiency you need to accelerate your career.

The first powerful component of our program is the outstanding classroom experience. MBA course work is taught by leading professors in their fields, bringing years of expertise and decision making directly to the academic setting. The knowledge you gain gives you the skills that are in demand, helping you understand the intricacies of business and, more specifically, your field of interest.

The second dynamic component is your corporate residency. Far removed from the typical internship, this will take your work experience to a whole new level. As a valued member of the team at a leading business, you will be fully integrated in your company, working side-by-side with staff members to deliver on organizational goals. As you contribute to projects that are business critical, you not only gain experience but also gain confidence in your abilities.

Whether you're in the classroom or working in a company through your corporate residency, you'll form relationships with students, employers, and world-class faculty who have rich backgrounds in a variety of companies and industries. Without a doubt, this network will serve you well throughout your career.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A GPA of 3.000 or higher is required at the end of each term.

Core Requirements

Code	Title	Hours
Required Core		
<i>Marketing</i>		
MKTG 6318	Customer Value and the Enterprise	2
<i>Strategic Decision Making</i>		
ACCT 6318	Analyzing Accounting Data for Strategic Decision Making	2
STRT 6318	Strategic Planning for the Future	2
<i>Management</i>		
FINA 6318	Financial Management	2
HRMG 6318	Managing the Organization	2
SCHM 6318	Managing Operations and the Supply Chain	2
<i>Innovation and Social Impact</i>		
BUSN 6363	Social Impact of Business	2
ENTR 6318	Innovating and Creating Futures	2
Career Management		
BUSN 6200	Career Management	0
BUSN 6950	MBA Skills Workshop	0
Experiential Experiences		
Complete 3 semester hours.		1-3
Corporate Residency		
BUSN 6964	Co-op Work Experience	0

Three-month, six-month, or two six-month Corporate Residency placement options

Concentration Options

Complete two of the following concentrations:

- Analytics (p. 78)
- Corporate Innovation and Venturing (p. 78)
- Entrepreneurship (p. 78)
- Finance—Corporate or Investment Track (p. 78)
- Healthcare Management (p. 79)
- International Business (p.)
- Leading People and Organizations (p.)
- Marketing (p. 79)
- Operations and Supply Chain Management (p. 79)

CONCENTRATION IN ANALYTICS

Code	Title	Hours
Required Core		
BUSN 6365	Business Analytics	3
Electives		
Complete 9 semester hours from the following:		9
CS 5100	Foundations of Artificial Intelligence	
CS 5200	Database Management Systems	
ECON 5140	Applied Econometrics	
MISM 6203	Business Analytics Methods	
MISM 6210	Information Visuals and Dashboards for Business	
MISM 6212	Data Mining and Machine Learning for Business	
MISM 6213	Business Information Design, Quality, and Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6230	Driving Marketing Performance: Measure, Analyze, Profit	
PPUA 5302	Information Design and Visual Analytics	
SCHM 6215	Supply Chain Analytics	

CONCENTRATION IN CORPORATE INNOVATION AND VENTURING

Code	Title	Hours
Required Core		
ENTR 6320	Innovation, Entrepreneurship, and Dynamic Competition	3
Electives		
Complete 9 semester hours from the following:		9
ARTG 5610	Design Systems	
ENTR 6218	Business Model Design and Innovation	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
GE 5100	Product Development for Engineers	
HRMG 6212	Creating an Innovative Organization	
HRMG 6280	The Human Side of Innovation	
MGMT 6280	Innovation for Next-Generation Products and Systems	
TECE 6222	Emerging and Disruptive Technologies	

CONCENTRATION IN ENTREPRENEURSHIP

Code	Title	Hours
Required Core		
ENTR 6320	Innovation, Entrepreneurship, and Dynamic Competition	3
Electives		
Complete 9 semester hours from the following:		9
ENTR 6200	Enterprise Growth and Innovation	
ENTR 6214	Social Enterprise	
ENTR 6218	Business Model Design and Innovation	
ENTR 6219	Financing Ventures from Early Stage to Exit	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
GE 5030	Iterative Product Prototyping for Engineers	
GE 5100	Product Development for Engineers	
TECE 6230	Entrepreneurial Marketing and Selling	
TECE 6300	Managing a Technology-Based Business	

CONCENTRATION IN FINANCE

Code	Title	Hours
Required Core		
FINA 6320	Advanced Financial Management	3
Track		
Complete one of the following two tracks:		
<i>Corporate Finance Track</i>		
Complete 3 semester hours from the following:		3
FINA 6203	Investment Analysis	
FINA 6216	Valuation and Value Creation	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
Complete 6 semester hours from the following:		6
FINA 6204	International Finance Management	
FINA 6205	Financial Strategy	
FINA 6211	Financial Risk Management	
FINA 6213	Investment Banking	
FINA 6214	Mergers and Acquisitions	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
FINA 6217	Real Estate Finance and Investment	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
<i>Investments Track</i>		
Complete 3 semester hours from the following:		3
FINA 6211	Financial Risk Management	
FINA 6219	Portfolio Management	
Complete 6 semester hours from the following:		6
FINA 6204	International Finance Management	
FINA 6211	Financial Risk Management	

FINA 6213	Investment Banking
FINA 6214	Mergers and Acquisitions
FINA 6216	Valuation and Value Creation
FINA 6217	Real Estate Finance and Investment
FINA 6219	Portfolio Management
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity
FINA 6360	Fund Management for Analysts
FINA 6361	Fund Management for Managers

CONCENTRATION IN HEALTHCARE MANAGEMENT

Code	Title	Hours
Required Core		
HINF 5105	The American Healthcare System	3
HRMG 6220	Health Organization Management	3
FINA 6220	Healthcare Finance	3
or SCHM 6223	Managing Healthcare Supply Chain Operations	
STRT 6220	Strategic Management for Healthcare Organizations	3

Optional Electives

Note: electives are not required, the following course(s) are suggested beyond the concentration: 3-9

ENTR 6214	Social Enterprise
FINA 6220	Healthcare Finance
HINF 6202	Business of Healthcare Informatics
HINF 6205	Creation and Application of Medical Knowledge
HRMG 6213	Leadership
MGMT 6214	Negotiations
MKTG 6218	Marketing in Service Sector
MKTG 6226	Consumer Behavior
PHTH 5232	Evaluating Healthcare Quality
PPUA 7247	Seminar in U.S. Health Policy and Management
SCHM 6223	Managing Healthcare Supply Chain Operations

CONCENTRATION IN INTERNATIONAL BUSINESS

Code	Title	Hours
Required Core		
INTB 6208	Global Management	3
Electives		
Complete 9 semester hours from the following:		9
FINA 6204	International Finance Management	
INTB 6212	Cultural Aspects of International Business	
INTB 6224	Competing to Win in Emerging Markets	
INTB 6226	Becoming a Global Leader	
INTB 6230	International Field Study	
INTB 6232	Doing Business in Emerging Markets	
INTB 6260	Advanced Topics in Global Management and Strategy	
MKTG 6206	International Marketing	

CONCENTRATION IN LEADING PEOPLE AND ORGANIZATIONS

Code	Title	Hours
Complete the following 12 semester hours:		
HRMG 6219	Leadership for Environmental Sustainability	12
HRMG 6221	Power and Influence	
HRMG 6223	Global Talent Management	
MGMT 6214	Negotiations	

CONCENTRATION IN MARKETING

Code	Title	Hours
Required Core		
MKTG 6320	(Advanced Marketing Management)	
Electives		
Complete 9 semester hours from the following:		9
MKTG 6210	Marketing Research	
MKTG 6212	International Marketing	
MKTG 6214	New Product Development	
or TECE 6250	Lean Design and Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	
MKTG 6224	B2B and Strategic Sales	
MKTG 6226	Consumer Behavior	
MKTG 6230	Driving Marketing Performance: Measure, Analyze, Profit	
MKTG 6260	Special Topics in Marketing	

CONCENTRATION IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Required Core		
SCHM 6213	Global Supply Chain Strategy	3
Electives		
Complete 9 semester hours from the following:		9
SCHM 6211	Logistics and Transportation Management	
SCHM 6212		
SCHM 6214	Sourcing and Procurement	
SCHM 6215	Supply Chain Analytics	
SCHM 6221	Sustainability and Supply Chain Management	
SCHM 6223	Managing Healthcare Supply Chain Operations	
SCHM 6224	Demand Planning and Forecasting	

Electives

Code	Title	Hours
In consultation with faculty advisor, complete 6 semester hours:		
ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, SCHM, STRT, and TECE		6
Complete 6 semester hours outside of D'Amore-Mckim School of Business; please consult program director for course options:		6
AACE 6000	Arts and Culture Organizational Leadership	

ARTG 6310	Design for Behavior and Experience
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
ECON 5140	Applied Econometrics
GE 5030	Iterative Product Prototyping for Engineers
GE 5100	Product Development for Engineers
INTL 5200	Political Economy: Interdisciplinary Perspectives
JRNL 5311	Design and Graphics
LPSC 6313	Economic Analysis for Law, Policy, and Planning
ME 5645	Environmental Issues in Manufacturing and Product Use
PPUA 5301	Introduction to Computational Statistics
PPUA 5302	Information Design and Visual Analytics
PPUA 6553	Nonprofit Financial Resource Development

Program Credit/GPA Requirements

55 total semester hours required

Minimum 3.000 GPA required

Business Administration, MBA—Part-Time Program

You know where you want to go. Our Part-Time MBA (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/mba/part-time?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=ptmba-mofu) will help you get there. Experience an educational path designed by you, delivered at a pace you determine, surrounded by a learning network that inspires you to push your boundaries.

Our Part-Time MBA program is made for motivated professionals like you, who seek to expand their skill set and accelerate their career. Learn from our faculty thought leaders who apply their unique practice-oriented approach that has established Northeastern University as a leader in experiential education.

Become an agile leader with the confidence to make a meaningful impact. Grow to be a resilient agent of change, prepared to tackle modern business challenges in your current role and beyond.

The D'Amore-McKim Part-Time MBA is the catalyst you need to reach new professional destinations.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Accounting		
ACCT 6200	Financial Reporting and Managerial Decision Making 1	3
ACCT 6201	Financial Reporting and Managerial Decision Making 2	1.5

Management

HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3
MGSC 6204	Managing Information Resources	1.5
SCHM 6201	Operations and Supply Chain Management	3

Marketing

MKTG 6200	Creating and Sustaining Customer Markets	3
MECN 6200	Global Competition and Market Dominance	3

Analysis

FINA 6200	Value Creation through Financial Decision Making	3
MGSC 6200	Information Analysis	3
STRT 6200	Strategic Decision Making in a Changing Environment	3

Entrepreneurship

ENTR 6200	Enterprise Growth and Innovation	3
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Electives

Note: Elective courses are either 1 or 3 credits. Of the 27 27 credits elective credits, no more than 6 can be drawn from 1-credit courses.

Concentration Options

Students in the part-time program may apply for up to two concentrations. Each concentration requires 9 credits (unless noted otherwise) of course work as outlined below:

- Corporate finance (p. 80)
- Corporate renewal (p. 81)
- Entrepreneurship (p. 81)
- Healthcare management (p. 81)
- International business (p. 81)
- Investments (p. 81)
- Marketing (p. 81)
- Mutual fund management (p. 82)
- Supply chain management (p. 81)
- Technical entrepreneurship (p. 82)

Consult your college administrator for more information.

CONCENTRATION IN CORPORATE FINANCE

Code	Title	Hours
Required Core		
FINA 6205	Financial Strategy	3
Restricted Electives		
Complete two of the following: 6		
FINA 6204	International Finance Management	
FINA 6213	Investment Banking	
FINA 6214	Mergers and Acquisitions	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
FINA 6231	Disrupting the Finance and Insurance Service Industries	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	

CONCENTRATION IN MARKETING

Code	Title	Hours
Restricted Electives		
Complete three of the following:		9
MKTG 6210	Marketing Research	
MKTG 6212	International Marketing	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	
MKTG 6224	B2B and Strategic Sales	
MKTG 6226	Consumer Behavior	
MKTG 6260	Special Topics in Marketing	

CONCENTRATION IN SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Restricted Electives		
Complete three of the following:		9
SCHM 6211	Logistics and Transportation Management	
SCHM 6213	Global Supply Chain Strategy	
SCHM 6214	Sourcing and Procurement	
SCHM 6215	Supply Chain Analytics	
SCHM 6221	Sustainability and Supply Chain Management	
SCHM 6223	Managing Healthcare Supply Chain Operations	
SCHM 6224	Demand Planning and Forecasting	

CONCENTRATION IN HEALTHCARE MANAGEMENT

Code	Title	Hours
Required Core		
HINF 5105	The American Healthcare System	3
STRT 6220	Strategic Management for Healthcare Organizations	3
HRMG 6220	Health Organization Management	3
Restricted Elective		
Complete one of the following:		3
PHTH 5234	Economic Perspectives on Health Policy	
PHTH 5232	Evaluating Healthcare Quality	
HINF 5101	Introduction to Health Informatics and Health Information Systems	
SCHM 6223	Managing Healthcare Supply Chain Operations	
FINA 6220	Healthcare Finance	

CONCENTRATION IN INVESTMENTS

Code	Title	Hours
Required Core		
FINA 6203	Investment Analysis	3
Restricted Electives		
Complete two of the following:		6
FINA 6211	Financial Risk Management	
FINA 6212	Fixed Income Securities and Risk	
FINA 6213	Investment Banking	

FINA 6217	Real Estate Finance and Investment	
FINA 6218	Personal Financial Planning	
FINA 6219	Portfolio Management	
FINA 6292	Advanced Topics in Finance	

CONCENTRATION IN CORPORATE RENEWAL

Code	Title	Hours
Restricted Electives		
Complete three of the following:		9
ENTR 6214	Social Enterprise	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
HRMG 6212	Creating an Innovative Organization	
HRMG 6213	Leadership	
MGMT 6210	Law for Managers and Entrepreneurs	
MGMT 6214	Negotiations	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	

CONCENTRATION IN INTERNATIONAL BUSINESS

Code	Title	Hours
Required Core		
INTB 6212	Cultural Aspects of International Business	3
Restricted Electives		
Complete two of the following:		6
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
FINA 6204	International Finance Management	
INTB 6217	Creating Sustainable Competitive Advantage through Global Innovation	
INTB 6224	Competing to Win in Emerging Markets	
INTB 6226	Becoming a Global Leader	
INTB 6230	International Field Study	
INTB 6232	Doing Business in Emerging Markets	
MKTG 6212	International Marketing	
SCHM 6213	Global Supply Chain Strategy	

CONCENTRATION IN ENTREPRENEURSHIP

Code	Title	Hours
Restricted Electives		
Complete three of the following:		9
ENTR 6212	Business Planning for New Ventures	
ENTR 6214	Social Enterprise	
ENTR 6218	Business Model Design and Innovation	
ENTR 6219	Financing Ventures from Early Stage to Exit	
ENTR 6220	Family Business Leadership and Governance	
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	

ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
MKTG 6214	New Product Development	
TECE 6300	Managing a Technology-Based Business	

CONCENTRATION IN TECHNICAL ENTREPRENEURSHIP

Code	Title	Hours
Restricted Electives		
Complete three of the following:		9
ENTR 6212	Business Planning for New Ventures	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
TECE 6222	Emerging and Disruptive Technologies	
TECE 6230	Entrepreneurial Marketing and Selling	
TECE 6250	Lean Design and Development	
TECE 6300	Managing a Technology-Based Business	
TECE 6340	The Technical Entrepreneur as Leader	

CONCENTRATION IN MUTUAL FUND MANAGEMENT

Code	Title	Hours
Required Core		
FINA 6203	Investment Analysis	3
FINA 6219	Portfolio Management	3
Restricted Elective		
Complete 3 semester hours of restricted electives. At least one credit must be from FINA 6361		3
FINA 6360	Fund Management for Analysts	
or FINA 6361	Fund Management for Managers	

Electives

Code	Title	Hours
Marketing		
MKTG 6210	Marketing Research	
MKTG 6212	International Marketing	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	
MKTG 6224	B2B and Strategic Sales	
MKTG 6226	Consumer Behavior	
MKTG 6260	Special Topics in Marketing	
Finance Group A		
FINA 6203	Investment Analysis	
FINA 6204	International Finance Management	
FINA 6211	Financial Risk Management	
FINA 6212	Fixed Income Securities and Risk	
FINA 6213	Investment Banking	
FINA 6217	Real Estate Finance and Investment	
FINA 6218	Personal Financial Planning	
FINA 6219	Portfolio Management	

Finance Group B

FINA 6205	Financial Strategy
FINA 6204	International Finance Management
FINA 6213	Investment Banking
FINA 6214	Mergers and Acquisitions
FINA 6215	Business Turnarounds
FINA 6216	Valuation and Value Creation
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity

Supply Chain Management

SCHM 6211	Logistics and Transportation Management
SCHM 6213	Global Supply Chain Strategy
SCHM 6214	Sourcing and Procurement
SCHM 6215	Supply Chain Analytics
SCHM 6221	Sustainability and Supply Chain Management
SCHM 6223	Managing Healthcare Supply Chain Operations

Entrepreneurship

ENTR 6212	Business Planning for New Ventures
ENTR 6214	Social Enterprise
ENTR 6218	Business Model Design and Innovation
ENTR 6219	Financing Ventures from Early Stage to Exit
ENTR 6220	Family Business Leadership and Governance
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets
MGMT 6210	Law for Managers and Entrepreneurs
MKTG 6214	New Product Development
TECE 6300	Managing a Technology-Based Business

Technical Entrepreneurship

TECE 6222	Emerging and Disruptive Technologies
TECE 6230	Entrepreneurial Marketing and Selling
TECE 6250	Lean Design and Development
TECE 6300	Managing a Technology-Based Business
TECE 6340	The Technical Entrepreneur as Leader
ENTR 6212	Business Planning for New Ventures
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity

Healthcare

HINF 5105	The American Healthcare System
HRMG 6220	Health Organization Management
STRT 6220	Strategic Management for Healthcare Organizations
HINF 5101	Introduction to Health Informatics and Health Information Systems
PHTH 5232	Evaluating Healthcare Quality
PHTH 5234	Economic Perspectives on Health Policy

SCHM 6223	Managing Healthcare Supply Chain Operations
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Mutual Fund Management

FINA 6203	Investment Analysis
FINA 6219	Portfolio Management
FINA 6360	Fund Management for Analysts
FINA 6361	Fund Management for Managers

International Business

INTB 6212	Cultural Aspects of International Business
FINA 6204	International Finance Management
INTB 6217	Creating Sustainable Competitive Advantage through Global Innovation
INTB 6226	Becoming a Global Leader
INTB 6230	International Field Study
MKTG 6212	International Marketing
SCHM 6213	Global Supply Chain Strategy

Corporate Renewal

ENTR 6214	Social Enterprise
FINA 6215	Business Turnarounds
FINA 6216	Valuation and Value Creation
HRMG 6212	Creating an Innovative Organization
HRMG 6213	Leadership
MGMT 6214	Negotiations
MKTG 6214	New Product Development
MKTG 6216	Market Focused Strategy

Program Credit/GPA Requirements

60 total semester hours required

Minimum 3.000 GPA required

Business Administration, MBA—Online Program

Our online MBA is a 100 percent online program with no campus residency requirements. Students may enter the program at one of nine start dates per academic year. By adhering to a schedule established at the semester of entry, the program may be completed in as little as two years. Students in the online MBA are classified as part-time and participate in one course at a time, completing core courses in the first year and capstone and elective courses in the second year.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Accounting		
ACCT 6272	Financial Statement Preparation and Analysis	2.25
ACCT 6273	Identifying Strategic Implications in Accounting Data	2.25
Management		
SCHM 6201	Operations and Supply Chain Management	3
HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3

MGSC 6204	Managing Information Resources	1.5
MGMT 6213	Managing Ethics in the Workplace and Marketplace	2

Marketing

MKTG 6200	Creating and Sustaining Customer Markets	3
MECN 6200	Global Competition and Market Dominance	3

Analysis

FINA 6200	Value Creation through Financial Decision Making	3
MGSC 6200	Information Analysis	3
STRT 6200	Strategic Decision Making in a Changing Environment	3

Entrepreneurship

ENTR 6200	Enterprise Growth and Innovation	3
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Electives

Code	Title	Hours
Choose 15 semester hours from the following subject areas:		15
ENTR, FINA, HRMG, INTB, MKTG, MGMT, MGSC, SCHM		

Concentration Options

- Finance (p. 83)
- Healthcare management (p. 83)
- High-technology management (p. 84)
- Innovation entrepreneurship (p. 84)
- International management (p. 84)
- Marketing (p. 84)
- Operations and supply chain management (p. 84)
- Sustainability (p. 84)

CONCENTRATION IN FINANCE

Code	Title	Hours
Choose 9 semester hours from the following:		9
FINA 6203	Investment Analysis	
FINA 6204	International Finance Management	
FINA 6205	Financial Strategy	
FINA 6213	Investment Banking	
FINA 6214	Mergers and Acquisitions	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
FINA 6220	Healthcare Finance	
FINA 6225	Entrepreneurial Finance for High Tech Companies	
MECN 6205	Sustainability and the Economics of Markets	

CONCENTRATION IN HEALTHCARE MANAGEMENT

Code	Title	Hours
Choose 9 semester hours from the following:		9
FINA 6220	Healthcare Finance	
MGSC 6221	Introduction to Health Informatics and Health Information Systems	
MGMT 6222	Healthcare Industry	

MGMT 6223 Strategic Decision Making for Healthcare Professionals

SCHM 6221 Sustainability and Supply Chain Management

CONCENTRATION IN HIGH-TECHNOLOGY MANAGEMENT

Code	Title	Hours
Choose 9 semester hours from the following:		9
FINA 6225	Entrepreneurial Finance for High Tech Companies	
HRMG 6217	Virtual, Vicious Teams: Building and Leading High-Performance Teams	
MGMT 6283	Business Law, Corporate Governance, and Intellectual Property Strategies	

CONCENTRATION IN INNOVATION ENTREPRENEURSHIP

Code	Title	Hours
Choose 9 semester hours from the following:		9
ENTR 6210	Managing Operations in Early Stage Ventures	
ENTR 6211	Entrepreneurship: Services and Retail Business Creation	
ENTR 6212	Business Planning for New Ventures	
ENTR 6216	Global Social Entrepreneurship and Innovation	
FINA 6225	Entrepreneurial Finance for High Tech Companies	
MKTG 6214	New Product Development	

CONCENTRATION IN INTERNATIONAL MANAGEMENT

Code	Title	Hours
Choose 9 semester hours from the following:		9
ENTR 6216	Global Social Entrepreneurship and Innovation	
INTB 6212	Cultural Aspects of International Business	
INTB 6217	Creating Sustainable Competitive Advantage through Global Innovation	
FINA 6204	International Finance Management	
MKTG 6212	International Marketing	
SCHM 6213	Global Supply Chain Strategy	

CONCENTRATION IN MARKETING

Code	Title	Hours
Choose 9 semester hours from the following:		9
MKTG 6210	Marketing Research	
MKTG 6212	International Marketing	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	

CONCENTRATION IN OPERATIONS AND SUPPLY CHAIN MANAGEMENT

Code	Title	Hours
Choose 9 semester hours from the following:		9
SCHM 6211	Logistics and Transportation Management	
SCHM 6213	Global Supply Chain Strategy	
SCHM 6214	Sourcing and Procurement	

CONCENTRATION IN SUSTAINABILITY

Code	Title	Hours
Choose 9 semester hours from the following:		9
MECN 6205	Sustainability and the Economics of Markets	
MGMT 6225	Sustainability and Leadership	
MGMT 6226	Sustainability and the Business Environment	
SCHM 6221	Sustainability and Supply Chain Management	

Program Credit/GPA Requirements

50 total semester hours required
Minimum 3.000 GPA required

Dual Degrees

If your interests and goals include multiple areas of expertise, customize your career path by combining the rigorous graduate coursework of the D'Amore-McKim MBA with a specialized master's degree. You'll have the opportunity to double your expertise and maximize your network. Not to mention, you'll leave with two degrees from one of the world's leading research institutions.

Programs

- MS/MBA—Nursing and Business Administration (p. 84)
- MSA/MBA—Accounting and Business Administration (p. 84)
- MSF/MBA—Finance and Business Administration—Full-Time (p. 86)
- MSF/MBA—Finance and Business Administration—Part-Time (p. 86)
- MSF/MBA—Finance and Business Administration—Online (p. 87)
- JD/MBA—Juris Doctorate and MBA (p. 87)

MS/MBA—Nursing and Business Administration

As a partnership between the Bouvé College of Health Sciences and the D'Amore-McKim School of Business, our Ms in Nursing/MBA dual-degree program is a powerful combination that positions candidates to operate with equal facility in the increasingly interdependent health and business spheres.

See Bouvé College of Health Sciences Nursing MS/MBA program (p. 267) for curriculum information.

MSA/MBA—Accounting and Business Administration

Nonaccounting majors get on the fast track to a career in accounting with our Master of Science in Accounting/Master of Business Administration dual-degree program (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/dual-degrees/accounting-mba?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=msamba-mofu). In just 15 months you will earn two degrees while gaining the skills, expertise, and confidence to walk right in and start working at a top accounting firm.

Your 15-month experience begins with a curriculum that has been designed in partnership with some of the region's leading accounting firms. This relevant industry-focused education maintains a sharp focus on business and accounting insights that you will put to work every day in your new career. In addition, you will be immersed in contemporary issues related to audit and tax, giving you a valuable perspective that is always fresh and topical.

You will put your new skills and insights to work during the busiest time of the year in a three-month, paid accounting internship at one of the top accounting firms in the business. In this role, you will have the one-on-one guidance of a seasoned mentor, where your exchange of ideas and insights will be mutually beneficial.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

MASTER OF SCIENCE IN ACCOUNTING REQUIREMENTS

Code	Title	Hours
Required Core		
ACCT 6223	Audit and Other Assurance Services	6
ACCT 6224	Taxation of Individuals and Business Entities	6
ACCT 6226	Strategic Cost Management	3
ACCT 6227	Accounting for Business Combinations	3
ACCT 6228	Contemporary Issues in Accounting Theory	3
Financial Reporting		
ACCT 6217	Corporate Governance, Ethics, and Financial Reporting	3
ACCT 6220	Corporate Financial Reporting and Decision Making 1	3
ACCT 6221	Corporate Financial Reporting and Decision Making 2	6
ACCT 6222	Corporate and Governmental/Nonprofit Financial Reporting and Decision Making	6

MASTER OF BUSINESS ADMINISTRATION REQUIREMENTS

Code	Title	Hours
Entrepreneurship		
ENTR 6211	Entrepreneurship: Services and Retail Business Creation	3
Analysis		
FINA 6200	Value Creation through Financial Decision Making	3
MGSC 6200	Information Analysis	3
MGSC 6201	Information Systems and Technology	3
STRT 6200	Strategic Decision Making in a Changing Environment	3
Management		
HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3
MGMT 6211	Business Law and Professional Ethics	3
SCHM 6210	Supply Chain Management	3
Marketing		

MECN 6200	Global Competition and Market Dominance	3
MKTG 6200	Creating and Sustaining Customer Markets	3

Co-op Requirement

Code	Title	Hours
BUSN 6964	Co-op Work Experience	0

Program Credit/GPA Requirements

72 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Term 1		Summer 1	Hours	Summer 2	Hours
	Corporate Reporting 1	Corporate Reporting 2			
	ACCT 6220	3	ACCT 6221	6	
	Management		Global Competition		
	HRMG 6200	3	MECN 6200	3	
			Information Analysis		
			MGSC 6200	3	
			6		12

Term 2		Fall	Hours
	Corporate Government		
	ACCT 6217	3	
	ACCT 6222	6	
	Audit		
	ACCT 6223	6	
	Taxation		
	ACCT 6224	6	
	Information Systems		
	MGSC 6201	3	
			24

Term 3		Spring	Hours
	Internship		
	BUSN 6964	0	
	Cost Management		
	ACCT 6226	3	
	Service and Manufacturing Operations		
	SCHM 6210	3	
			6

Term 4		Summer 1	Hours	Summer 2	Hours
	Accounting	Accounting			

ACCT 6227	3	ACCT 6228	3
Entrepreneurship		Business Law and Ethics	
ENTR 6211	3	MGMT 6211	3
Financial Decision Making		Global Enterprise	
FINA 6200	3	INTB 6200	3
Customer Markets		Strategic Decision Making	
MKTG 6200	3	STRT 6200	3
	12		12

Total Hours: 72

MSF/MBA—Finance and Business Administration—Full-Time

PENDING - NEW FULL TIME MBA MAY IMPACT THIS PROGRAM - PLEASE SPEAK TO DMSB

As the business world undergoes more and more complex changes, you need the expertise and insight to keep up—and keep ahead. Through our Full-Time Master of Science in Finance/Master of Business Administration dual-degree program, you'll gain the knowledge and proficiency you need to accelerate your career.

The MS in Finance/MBA will develop your managerial potential and your practical finance skills in key areas such as valuation, mergers and acquisitions, risk management, insurance, and investments. Gain knowledge and experience through courses taught by leading professors in their fields and your corporate residency.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

MASTER OF SCIENCE IN FINANCE

Code	Title	Hours
Required Core		
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3
FINA 6208	Financial Management for Value Creation	4

Electives

Complete 12 semester hours of FINA courses. 12

MASTER OF BUSINESS ADMINISTRATION

Code	Title	Hours
Required Core		
ACCT 6208	Financial Reporting and Managerial Decision Making	4
BUSN 6200	Career Management	0
BUSN 6950	MBA Skills Workshop	0

ENTR 6208	Innovation and Enterprise Growth	2
HRMG 6208	Effective Organizational and Human Behavior	3
INTB 6208	Global Management	3
INTB 6238	Global Project	3
MGSC 6205	Management of Information Resources	2
MGSC 6207	Data Analysis for Decision Making	2
MECN 6208	Economics for Managerial Decision Making	2
MKTG 6208	Marketing and Customer Value	4
SCHM 6200	Supply Chain and Operations Management	4
STRT 6208	Strategic Decisions for Growth	3

Electives

Complete 12 semester hours in the following subject areas. 12
Note that these courses may be finance courses:

ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, STRT, and TECE

Program Credit/GPA Requirements

72 total semester hours required
Minimum 3.000 GPA required

MSF/MBA—Finance and Business Administration—Part-Time

You know where you want to go. Our Part-Time MS in Finance/MBA (http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/dual-degrees/finance-mba-part-time?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=ptmsfmba-mofu) dual-degree program will help you get there. Gain the vital knowledge, skills, and expertise you need to accelerate your career while you build a strong personal portfolio of core business skills and specialized financial expertise.

Our Part-Time MS in Finance/MBA program is made for motivated professionals like you. It allows you to complete your degree on your own timetable, set your schedule, and specialize in an area that meets your career goals. Learn from our faculty thought leaders who apply their unique practice-oriented approach that has established Northeastern University as a leader in experiential education.

Become an agile leader with the confidence to make a meaningful impact. Grow to be a resilient agent of change, prepared to tackle modern business challenges in your current role and beyond.

The D'Amore-McKim Part-Time MS in Finance/MBA is the catalyst you need to reach new professional destinations.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Accounting		
ACCT 6200	Financial Reporting and Managerial Decision Making 1	3
ACCT 6201	Financial Reporting and Managerial Decision Making 2	1.5

Management		
HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3
MGSC 6204	Managing Information Resources	1.5
SCHM 6201	Operations and Supply Chain Management	3

Marketing		
MKTG 6200	Creating and Sustaining Customer Markets	3
MECN 6200	Global Competition and Market Dominance	3

Analysis		
FINA 6200	Value Creation through Financial Decision Making	3
MGSC 6200	Information Analysis	3
STRT 6200	Strategic Decision Making in a Changing Environment	3

Entrepreneurship		
ENTR 6200	Enterprise Growth and Innovation	3

Additional Required Finance Courses		
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3

Electives

Code	Title	Hours
Finance Electives		
Complete 12 semester hours of FINA courses.		12
Business Electives		
Complete 15 semester hours of courses from the following subject areas. Note that these courses may include finance courses:		15
ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, and STRT		

Program Credit/GPA Requirements

72 total semester hours required
Minimum 3.000 GPA required

MSF/MBA—Finance and Business Administration—Online

Our online Master of Science in Finance/Master of Business Administration dual-degree program is designed to help you develop your managerial potential and practical finance skills in key areas such as valuation, mergers and acquisitions, risk management, insurance, and investments. The online MS in finance/MBA can be completed in as little as three years.

All interested candidates will start by enrolling in the online MBA and may apply to move into the dual program at any point during their second year. Our 100 percent online dual-degree program is available to second-year online MBA students who have achieved a minimum of a 3.000 grade-point average and a B grade in Financial Statement Preparation and Analysis (ACCT 6272), Identifying Strategic Implications in Accounting Data (ACCT 6273), and Value Creation through Financial Decision Making (FINA 6200).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ACCT 6272	Financial Statement Preparation and Analysis	2.25
ACCT 6273	Identifying Strategic Implications in Accounting Data	2.25
HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3
MGMT 6213	Managing Ethics in the Workplace and Marketplace	2
MGSC 6204	Managing Information Resources	1.5
SCHM 6201	Operations and Supply Chain Management	3
MKTG 6200	Creating and Sustaining Customer Markets	3
MECN 6200	Global Competition and Market Dominance	3
ENTR 6200	Enterprise Growth and Innovation	3
STRT 6200	Strategic Decision Making in a Changing Environment	3
MGSC 6200	Information Analysis	3
FINA 6200	Value Creation through Financial Decision Making	3
FINA 6203	Investment Analysis	3
FINA 6204	International Finance Management	3
FINA 6205	Financial Strategy	3
FINA 6206	Finance Seminar	3

Electives

Code	Title	Hours
Finance Electives		
Complete 9 semester hours of finance electives.		9
Business Electives		
Complete 6 semester hours in the following subject areas. Note that these courses may include finance courses:		6
MGSC, ENTR, FINA, HRMG, MKTG, MGMT, SCHM, SUST		

Program Credit/GPA Requirements

62 total semester hours required
Minimum 3.000 GPA required

JD/MBA—Juris Doctorate and MBA

As a partnership between the School of Law and the D'Amore-McKim School of Business, our JD/MBA dual-degree program is a powerful combination that positions candidates to operate with equal facility in the increasingly interdependent legal and business spheres.

The JD/MBA program is a full-time, four-year course of study that includes four one-quarter co-op work experiences at the intersection of law and business arranged through the law school co-op office. Starting in the fall term, JD/MBA candidates complete three years of law school, taking a break after either year one or year two to complete one year of business school. Within the business school, candidates will take the

first two semesters of the full-time MBA program and 13 credits of MBA electives. Information detailing the three years of JD course work and co-op is available at the School of Law (<http://www.northeastern.edu/law/academics/curriculum/dual-degrees/jdmba.html>) website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Concurrent degree candidates follow a set schedule for the MBA requirements, as follows:

Code	Title	Hours
Management		
ENTR 6208	Innovation and Enterprise Growth	2,3
FINA 6208	Financial Management for Value Creation	4
INTB 6200	Managing the Global Enterprise	3
MGSC 6205	Management of Information Resources	2
SCHM 6200	Supply Chain and Operations Management	4
Financial Reporting		
ACCT 6208	Financial Reporting and Managerial Decision Making	4
Marketing		
MKTG 6208	Marketing and Customer Value	4
Economics		
MECN 6208	Economics for Managerial Decision Making	2
Human Resources		
HRMG 6208	Effective Organizational and Human Behavior	3
Analysis		
MGSC 6207	Data Analysis for Decision Making	2
STRT 6208	Strategic Decisions for Growth	3

Electives

Code	Title	Hours
Complete 16 semester hours from the following subject areas:		16
ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, STRT, and TECE		

Program Credit/GPA Requirements

49 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
MGSC 6205	2	MGSC 6207	2	INTB 6200	3
ACCT 6208	4	STRT 6208	3	Electives	

MKTG 6208	4	ENTR 6208	2-3	Complete 13 semester hours from the following subject areas:	13
MECN 6208	2	FINA 6208	4	ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, STRT, and TECE	
HRMG 6208	3	SCHM 6200	4		
		Elective			
		Complete 3 semester hours of course work from the following subject areas:		3	
		ACCT, ENTR, FINA, HRMG, INTB, MECN, MKTG, MGMT, SCHM, STRT, and TECE			
		15	18-19		16

Total Hours: 49-50

Graduate Certificate Programs

Business professionals are much like businesses themselves—as opportunities emerge and the marketplace evolves, their needs change. Designed for working professionals, our graduate certificates are a way to quickly gain specialized knowledge and a professional credential in order to advance your career. Our certificates require 12 to 15 credits that you may accelerate and take in as little as one semester, or spread out and take up to three years to complete. With three start dates each year and no GMAT required for admission, you can quickly gain the skills you need most in your career—now!

Just-in-Time Learning. Our graduate certificate programs are designed to give you training that you can use immediately. The skills you learn in an evening class will be useful to you the next morning at work. At D’Amore-McKim School of Business, you won’t just find theoretical training for a theoretical future—you’ll also have the opportunity to gain practical, real-world knowledge rooted in the realities of working life.

Shape your own experience. When you pursue a graduate certificate, you have the opportunity to focus your studies and specialize in the area of business that provides you with the best career opportunities.

Study on your own terms. Our graduate certificate programs are designed with working professionals in mind. Courses are offered on weeknights and Saturdays. You may even take one of our courses online. You can choose to come to campus just one night a week or accelerate the program by taking a heavier course load each semester. Start your graduate certificate at a time that works for you. You can enter your program in January, May, or September.

Build toward something more. Our graduate certificate programs are a unique opportunity to quickly gain fundamental business knowledge and earn a graduate-level credential from a top 40 U.S. research university, as ranked by *U.S. News & World Report*. And that’s just the beginning. When you are ready to pursue a full graduate degree at D’Amore-McKim—now or in the future—the credits you earn during the certificate program may be applied to eligible master’s programs, including the part-time MBA. This is a valuable opportunity to turn your career-enhancing graduate certificate into a more advanced professional credential.

Learn more about graduate certificates (<http://www.damore-mckim.northeastern.edu/academic-programs/graduate-programs/certificates>) on the D’Amore-McKim website.

Programs

- Accounting and Financial Decision Making (p. 89)
- Accounting and Financial Decision Making—Online (p. 89)
- Business Administration (p. 90)
- Business Administration—Online (p. 91)
- Corporate Finance (p. 92)
- Corporate Finance—Online (p. 92)
- Corporate Renewal (p. 92)
- Corporate Renewal—Online (p. 93)
- Healthcare Administration and Policy (p. 93)
- Innovation Management (p. 94)
- International Business (p. 94)
- International Business—Online (p. 95)
- Investments (p. 95)
- Leadership and Human Capital (p. 96)
- Marketing (p. 96)
- Marketing—Online (p. 96)
- Mutual Fund Management (p. 97)
- Supply Chain Management (p. 97)
- Supply Chain Management—Online (p. 98)
- Technological Entrepreneurship (p. 98)

Accounting and Financial Decision Making, Graduate Certificate

Sharpen your insight into how businesses succeed. Accounting and financial decision-making skills are the foundation of any successful business venture. Individuals with the knowledge and experience to make informed financial decisions are highly valued contributors in businesses across the globe.

In the Graduate Certificate in Accounting and Financial Decision Making, you will have the opportunity to explore topics such as financial risk management, value creation, and information analysis. Exposure to decision-making theory will assist your conceptual understanding of how investors, money managers, and corporate managers make economic and financial decisions.

Once you have completed your D’Amore-McKim Graduate Certificate in Accounting and Financial Decision Making, endless opportunities lie ahead. Apply to a master’s degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/accounting?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcafdm-mofu) on the D’Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ACCT 6200 and ACCT 6201	Financial Reporting and Managerial Decision Making 1 and Financial Reporting and Managerial Decision Making 2	4.5
MGSC 6200	Information Analysis	3
FINA 6200	Value Creation through Financial Decision Making	3

Elective

Code	Title	Hours
Complete one of the following:		1.5-3
MGSC 6204	Managing Information Resources	
Any MBA core course titled 6200 (see below):		
ENTR 6200	Enterprise Growth and Innovation	
HRMG 6200	Managing People and Organizations	
INTB 6200	Managing the Global Enterprise	
MKTG 6200	Creating and Sustaining Customer Markets	
MECN 6200	Global Competition and Market Dominance	
STRT 6200	Strategic Decision Making in a Changing Environment	

Program Credit/GPA Requirements

12 total semester hours required, may complete a maximum of 15 semester hours
 Minimum 3.000 GPA required

Accounting and Financial Decision Making—Online Program, Graduate Certificate

Sharpen your insight into how businesses succeed. Accounting and financial decision-making skills are the foundation of any successful business venture. Individuals with the knowledge and experience to make informed financial decisions are highly valued contributors in businesses across the globe.

In the Graduate Certificate in Accounting and Financial Decision Making, you will have the opportunity to explore topics such as financial statement preparation, value creation, and information analysis. Exposure to decision-making theory will assist your conceptual understanding

of how investors, money managers, and corporate managers make economic and financial decisions.

Once you have completed your D'Amore-McKim Graduate Certificate in Accounting and Financial Decision Making, endless opportunities lie ahead. Apply to an eligible master's degree program and the credits you have already earned may be applied toward that program, or explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ACCT 6272	Financial Statement Preparation and Analysis	2.25
ACCT 6273	Identifying Strategic Implications in Accounting Data	2.25
FINA 6200	Value Creation through Financial Decision Making	3
MGSC 6200	Information Analysis	3
MGSC 6204	Managing Information Resources	1.5

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Business Administration, Graduate Certificate

Northeastern University's Graduate Certificates in Business Administration can help you quickly gain specialized knowledge and a professional credential to advance your career. The Graduate Certificate in Business Administration at the D'Amore-McKim School of Business is designed to help you learn the skills you need to excel today, while earning credits to drive you toward tomorrow's goals.

Your program will consist of four to six essential business courses. You may accelerate the curriculum and complete in as little as eight months, or spread out and take up to three years to complete. You may choose to focus on one area of specialty or gain fundamental business knowledge around financial reporting and managerial decision making, managing people and organizations, information analysis, and managing information resources.

You can gain this specialized knowledge in four ways:

PART-TIME MBA PATH

Have you considered pursuing your MBA, but a full-time commitment isn't the right fit for your life? Do you want to gain experience in graduate-level classes before committing to a full degree? Our Part-Time MBA Path (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/business-administration/academics/part-time-mba-path?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcba-mofu) has been designed for you. This program offers six foundational classes (15 credits) from the D'Amore-McKim MBA curriculum to prepare you now for emerging opportunities in your field.

Once you have completed your Graduate Certificate in Business Administration through the Part-Time MBA Path and you have applied and been accepted to our part-time MBA, then the credits you've earned during your certificate program will apply. Not only that, but your

performance in the courses can make you eligible to waive the GMAT requirement.

BUILD YOUR OWN CURRICULUM

Do you need specialized knowledge in a particular area of business? Building your own (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/business-administration/academics/build-your-own?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcba-mofu) Graduate Certificate in Business Administration gives you the power to create the business curriculum you need. Custom select any five courses (15 credits) from our MBA program—just the courses you need to propel you toward your career goals and personal aspirations.

EIGHT-MONTH INTERNATIONAL STUDENT COHORT

Are you ready to study in the United States.? This full-time, eight-month program is tailored to meet the needs of international students. You'll complete this rigorous course work as part of a small, intimate cohort. The International Student Cohort (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/business-administration/academics/international-cohort?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcba-mofu) is designed to help you build your knowledge of essential business practices like financial decision making, innovation, and management. You will have the opportunity to gain relevant, in-demand skills that will help you to tackle today's business challenges.

ACCELERATED FOUR-MONTH CURRICULUM

Where do you want to be four months from now? With our Accelerated Four-Month Curriculum (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/business-administration/academics/accelerated?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcba-mofu), you can learn meaningful business skills in just one semester. Open to both U.S. and international students, this option is perfect for professionals with the ability to dedicate four months to an intensive, condensed educational experience. If you are an international student returning to your home country after your semester at D'Amore-McKim, you may be able to transfer credits back to your home program.

Through successful completion of the Graduate Certificate in Business Administration, you will earn credits that may be applied to eligible master's programs, both within D'Amore-McKim School of Business or in the College of Professional Studies. Upon acceptance to one of the eligible degree programs, you may be able to apply the credits you have already earned toward the completion of your degree.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/business-administration?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcba-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Tracks

Complete one of the following three tracks. *Note:* The part-time MBA track and the international student track require an additional 3 semester hours.

PART-TIME MBA TRACK

Code	Title	Hours
ACCT 6200	Financial Reporting and Managerial Decision Making 1	3
ACCT 6201	Financial Reporting and Managerial Decision Making 2	1.5
FINA 6200	Value Creation through Financial Decision Making	3
HRMG 6200	Managing People and Organizations	3
MGSC 6200	Information Analysis	3
MGSC 6204	Managing Information Resources	1.5

INTERNATIONAL STUDENT TRACK

Code	Title	Hours
ACCT 6200	Financial Reporting and Managerial Decision Making 1	3
ENTR 6200	Enterprise Growth and Innovation	3
HRMG 6200	Managing People and Organizations	3
INTB 6200	Managing the Global Enterprise	3
MKTG 6200	Creating and Sustaining Customer Markets	3

BUILD YOUR OWN TRACK

Customize your schedule by taking any 12 credits within the part-time MBA program assuming you meet prerequisites per course.

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Business Administration—Online Program, Graduate Certificate

Our 100 percent online Graduate Certificate in Business Administration can help you quickly gain specialized knowledge and a professional credential to advance your career. The Graduate Certificate in Business Administration at the D'Amore-McKim School of Business is designed to help you learn the skills you need to excel today, while earning credits to drive you toward tomorrow's goals.

Your program will consist of four essential business courses. You may accelerate the curriculum and complete it in as little as eight months, or spread it out and take up to three years to complete. You may choose to focus on one area of specialty or gain fundamental business knowledge in topics such as financial reporting and managerial decision making, managing people and organizations, and marketing.

Once you have completed your D'Amore-McKim Graduate Certificate in Business Administration, endless opportunities lie ahead. Apply to an eligible master's degree program, including the online MBA, and the credits you have already earned may be applied to that program, or you may opt to explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 12 semester hours from the following:		12
MGSC 6200	Information Analysis	
MGSC 6204	Managing Information Resources	

HRMG 6200	Managing People and Organizations
FINA 6200	Value Creation through Financial Decision Making
ACCT 6272	Financial Statement Preparation and Analysis
ACCT 6273	Identifying Strategic Implications in Accounting Data
FINA 6203	Investment Analysis
FINA 6204	International Finance Management
FINA 6205	Financial Strategy
FINA 6211	Financial Risk Management
FINA 6213	Investment Banking
FINA 6214	Mergers and Acquisitions
FINA 6215	Business Turnarounds
FINA 6216	Valuation and Value Creation
FINA 6217	Real Estate Finance and Investment
MECN 6205	Sustainability and the Economics of Markets
ENTR 6211	Entrepreneurship: Services and Retail Business Creation
ENTR 6216	Global Social Entrepreneurship and Innovation
ENTR 6200	Enterprise Growth and Innovation
ENTR 6212	Business Planning for New Ventures
ENTR 6210	Managing Operations in Early Stage Ventures
MKTG 6212	International Marketing
MECN 6200	Global Competition and Market Dominance
MKTG 6200	Creating and Sustaining Customer Markets
MKTG 6210	Marketing Research
MKTG 6214	New Product Development
MKTG 6216	Market Focused Strategy
MKTG 6218	Marketing in Service Sector
MKTG 6222	Digital Marketing
MKTG 6223	Brand and Advertising Management
MKTG 6212	International Marketing
MGMT 6222	Healthcare Industry
MGMT 6223	Strategic Decision Making for Healthcare Professionals
MGMT 6225	Sustainability and Leadership
MGMT 6226	Sustainability and the Business Environment
MGMT 6283	Business Law, Corporate Governance, and Intellectual Property Strategies
MGSC 6221	Introduction to Health Informatics and Health Information Systems
INTB 6200	Managing the Global Enterprise
INTB 6212	Cultural Aspects of International Business
INTB 6217	Creating Sustainable Competitive Advantage through Global Innovation
HRMG 6217	Virtual, Vicious Teams: Building and Leading High-Performance Teams
SCHM 6213	Global Supply Chain Strategy

SCHM 6211	Logistics and Transportation Management
SCHM 6201	Operations and Supply Chain Management
SCHM 6214	Sourcing and Procurement
SCHM 6221	Sustainability and Supply Chain Management

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Corporate Finance, Graduate Certificate

Sharpen your financial perspective. Financial acumen is the foundation of any successful business venture. Now you can explore this essential business knowledge through a flexible, part-time program and gain insight into strategies needed for tackling real-world financial challenges.

Through the Graduate Certificate in Corporate Finance, you will develop foundational financial knowledge through the study of global markets. Your course work will introduce methods of implementing financial strategy by stressing the impact of ethical and legal considerations. You may also choose to examine the financial, managerial, accounting, and legal factors affecting corporate mergers or explore advanced financial risk management.

Once you have completed your D'Amore-McKim Graduate Certificate in Corporate Finance and apply to an eligible master's degree program, the credits you have already earned may be applied.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/corporate-finance?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gccf-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
FINA 6205	Financial Strategy	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following:		

FINA 6211	Financial Risk Management	
FINA 6213	Investment Banking	
FINA 6214	Mergers and Acquisitions	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
FINA 6260	Entrepreneurial Finance, Innovation Valuation, and Private Equity	
Any MBA core course titled 6200 (see below):		
ACCT 6200	Financial Reporting and Managerial Decision Making 1	
HRMG 6200	Managing People and Organizations	
INTB 6200	Managing the Global Enterprise	

MKTG 6200	Creating and Sustaining Customer Markets
MECN 6200	Global Competition and Market Dominance
STRT 6200	Strategic Decision Making in a Changing Environment

Program Credit/GPA Requirements

12 total semester hours required, may complete a maximum of 15 semester hours

Minimum 3.000 GPA required

Corporate Finance—Online Program, Graduate Certificate

Sharpen your financial perspective. Financial acumen is the foundation of any successful business venture. Now you can explore this essential business knowledge through a flexible, 100 percent online program and gain insight into strategies needed for tackling real-world financial challenges.

Through the online Graduate Certificate in Corporate Finance, you will develop foundational financial knowledge through the study of global markets. Your course work will introduce methods of implementing financial strategy by stressing the impact of ethical and legal considerations. You may also choose to examine the financial, managerial, accounting, and legal factors affecting corporate mergers or explore advanced financial risk management.

Once you have completed your D'Amore-McKim online Graduate Certificate in Corporate Finance, endless opportunities lie ahead. Apply to an eligible master's degree program—including the online MBA—and the credits you have already earned may be applied toward that program, or explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
FINA 6205	Financial Strategy	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following:		

FINA 6211	Financial Risk Management	
FINA 6213	Investment Banking	
FINA 6214	Mergers and Acquisitions	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Corporate Renewal, Graduate Certificate

Are you looking for a short course of study to help you enhance your understanding of the analysis and planning required to help struggling companies transform a successful future? The Graduate Certificate in

Corporate Renewal at Northeastern University’s D’Amore-McKim School of Business is for you.

Through the Graduate Certificate in Corporate Renewal, you will have the opportunity to build your knowledge of business turnarounds, value creation, negotiations, and more to help you propel your success in this exciting and challenging field.

Once you have completed your D’Amore-McKim Graduate Certificate in Corporate Renewal, endless opportunities lie ahead. Apply to a master’s degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/corporate-renewal?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gccr-mofu) on the D’Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 12 semester hours from the following:		12
ENTR 6214	Social Enterprise	
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
HRMG 6212	Creating an Innovative Organization	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	
MGMT 6214	Negotiations	

Program Credit/GPA Requirements

12 total semester hours required, may complete a maximum of 15 semester hours
 Minimum 3.000 GPA required

Corporate Renewal—Online Program, Graduate Certificate

Are you looking for a short course of study to help you enhance your understanding of the analysis and planning required to help struggling companies transform for a successful future? Our 100 percent online Graduate Certificate in Corporate Renewal is for you.

Through the online Graduate Certificate in Corporate Renewal, you will have the opportunity to build your knowledge of business turnarounds, value creation, negotiations, and more to help you propel your success in this exciting and challenging field.

Once you have completed your D’Amore-McKim Graduate Certificate in Corporate Renewal, endless opportunities lie ahead. Apply to an eligible master’s degree program—including the online MBA—and the credits you have already earned may be applied toward that program, or you may opt to explore new opportunities for career growth.

Program Requirements

Core Requirement

Code	Title	Hours
Complete one of the following:		3
FINA 6200	Value Creation through Financial Decision Making	
MKTG 6200	Creating and Sustaining Customer Markets	
HRMG 6200	Managing People and Organizations	

Electives

Code	Title	Hours
Complete 9 semester hours from the following:		9
FINA 6215	Business Turnarounds	
FINA 6216	Valuation and Value Creation	
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	

Program Credit/GPA Requirements

12 total semester hours required
 Minimum 3.000 GPA required

Healthcare Administration and Policy, Graduate Certificate

Through Northeastern University’s Graduate Certificate in Healthcare Administration and Policy, you will have the opportunity to explore fundamental business strategy concepts as they apply to the healthcare industry.

The D’Amore-McKim School of Business at Northeastern University creates a rich learning environment where theories and concepts are applied to real-world business issues. In a dynamic classroom environment, you will have the opportunity to gain exposure to the fundamental principles of health organization management. You may choose to study topics such as the impact of global economics on the American healthcare system or management of supply chain operations in the healthcare sector.

Through successful completion of your Graduate Certificate in Healthcare Administration and Policy, you will earn credits that may be applied to eligible master’s programs, both within D’Amore-McKim School of Business or in the College of Professional Studies. Upon acceptance to one of the eligible degree programs, you may be able to apply the credits you have already earned toward the completion of your degree.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/healthcare?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gchap-mofu) on the D’Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
HINF 5105	The American Healthcare System	3
STRT 6220	Strategic Management for Healthcare Organizations	3
HRMG 6220	Health Organization Management	3

Elective

Code	Title	Hours
Complete 3 semester hours from the following: 3		
HINF 5101	Introduction to Health Informatics and Health Information Systems	
LAW 7617	Economic Perspectives on Health Policy	
PHTH 5232	Evaluating Healthcare Quality	
SCHM 6223	Managing Healthcare Supply Chain Operations	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Innovation Management, Graduate Certificate

Creative thinkers bring new ideas to life. They embrace critical thinking and seek continuous improvement. However, with any business venture, there are challenges that must be overcome to establish sustainable growth.

Are you interested in learning about the techniques required to manage an innovative business environment? In our Graduate Certificate in Innovation Management, you will have the opportunity to build a strong conceptual understanding of the processes behind developing a business plan, the legal environment for innovation, the new product development process, and much more. This targeted curriculum will help you learn to introduce an innovative culture and mindset to your business to develop and sustain its growth.

Once you have completed your D'Amore-McKim Graduate Certificate in Innovation Management, endless opportunities lie ahead. Apply to a master's degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/innovation-management?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcim-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
ENTR 6200	Enterprise Growth and Innovation	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following: 9		
ENTR 6212	Business Planning for New Ventures	
ENTR 6214	Social Enterprise	
ENTR 6218	Business Model Design and Innovation	
ENTR 6220	Family Business Leadership and Governance	
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets	
ENTR 6224	Intellectual Property and Other Legal Aspects of Business and Innovation	
ENTR 6225	Corporate Entrepreneurship through Global Growth, Acquisitions, and Alliances	
MGMT 6210	Law for Managers and Entrepreneurs	
MKTG 6214	New Product Development	
TECE 6222	Emerging and Disruptive Technologies	
TECE 6230	Entrepreneurial Marketing and Selling	
TECE 6250	Lean Design and Development	
TECE 6300	Managing a Technology-Based Business	
TECE 6340	The Technical Entrepreneur as Leader	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

International Business, Graduate Certificate

Delve into the driving forces behind today's global business landscape with our Graduate Certificate in International Business. Benefit from the expertise of international business professionals and earn valuable business perspective to accelerate your career and impact your current job, while still working full-time.

In this targeted curriculum, you will have the opportunity to understand what influences multinational corporations and what are key considerations when entering business partnerships with foreign companies. You can analyze why and how firms internationalize their operations, key features of successful global partnerships, and study areas of international business operations, such as manufacturing, marketing, and organizational management. You may also choose to develop your understanding of emerging markets and how emerging market companies compete with developed companies to support future viability and success.

Once you have completed your D'Amore-McKim Graduate Certificate in International Business, endless opportunities lie ahead. Apply to a master's degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/international-business?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcib-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
INTB 6200	Managing the Global Enterprise	3
INTB 6212	Cultural Aspects of International Business	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following:		
ENTR 6200	Enterprise Growth and Innovation	6
FINA 6204	International Finance Management	
INTB 6224	Competing to Win in Emerging Markets	
INTB 6230	International Field Study	
MECN 6200	Global Competition and Market Dominance	
MKTG 6212	International Marketing	
SCHM 6213	Global Supply Chain Strategy	

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits
Minimum 3.000 GPA required

International Business—Online Program, Graduate Certificate

Delve into the driving forces behind today's global business landscape with our 100 percent online Graduate Certificate in International Business. Benefit from the expertise of international business professionals and earn valuable business perspective to accelerate your career and impact your current job, while still working full time.

In this targeted curriculum, you will have the opportunity to understand what influences multinational corporations and how corporate cultures evolve in the context of national cultures. You can analyze why and how firms internationalize their operations or explore key features of successful global partnerships. You may also choose to develop your understanding of emerging markets and how emerging market companies compete with developed companies to support future viability and success.

Once you have completed your online Graduate Certificate in International Business, endless opportunities lie ahead. Apply to an eligible master's degree program—including the online MBA—and the credits you have already earned may be applied toward that program, or you may opt to explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
INTB 6200	Managing the Global Enterprise	3
INTB 6212	Cultural Aspects of International Business	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following:		
ENTR 6200	Enterprise Growth and Innovation	6
FINA 6204	International Finance Management	
MECN 6200	Global Competition and Market Dominance	
MKTG 6212	International Marketing	
SCHM 6213	Global Supply Chain Strategy	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Investments, Graduate Certificate

Investment skills are a foundation of any successful business venture. Individuals with the knowledge and experience to make informed investment decisions are highly valued contributors in businesses across the globe.

Through our Graduate Certificate in Investments, you will have the opportunity to analyze concepts like market efficiency, intrinsic value, and risk and learn how to build unique valuation models to suit particular investment alternatives.

Through successful completion of your Graduate Certificate in Investments, you will earn credits that may be applied to eligible master's programs, both within D'Amore-McKim School of Business or in the College of Professional Studies. Upon acceptance to one of the eligible degree programs, you may be able to apply the credits you have already earned toward the completion of your degree.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/investments?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gci-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
FINA 6203	Investment Analysis	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following:		
FINA 6211	Financial Risk Management	9
FINA 6212	Fixed Income Securities and Risk	
FINA 6213	Investment Banking	
FINA 6217	Real Estate Finance and Investment	
FINA 6218	Personal Financial Planning	
FINA 6219	Portfolio Management	

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits

Minimum 3.000 GPA required

Leadership and Human Capital, Graduate Certificate

Are you ready to lead in a changing world? As our world continues to change and grow, new business leaders are emerging with the skills and insight to push the forefront of workforce management. Will you be among them?

Northeastern University's Graduate Certificate in Leadership and Human Capital will help you enhance your potential to grow into leadership positions, while exploring topics like managing high-performance teams, workforce analytics, developing great company culture, and more.

Once you have completed your Graduate Certificate in Leadership and Human Capital, endless opportunities lie ahead. Apply to a master's degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/leadership?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gclhc-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
HRMG 6200	Managing People and Organizations	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following: 9		
HRMG 6210	Managing Professionals and High Performance Teams	
HRMG 6212	Creating an Innovative Organization	
HRMG 6213	Leadership	
HRMG 6214	A Management Perspective of Human Resource Management	
HRMG 6219	Leadership for Environmental Sustainability	
HRMG 6220	Health Organization Management	
MGMT 6214	Negotiations	
STRT 6210	Workforce Metrics and Analytics	

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits
Minimum 3.000 GPA required

Marketing, Graduate Certificate

Through Northeastern University's Graduate Certificate in Marketing, you will have the opportunity to gain the core knowledge and skills necessary to carry out essential marketing functions—from branding new products to advertising services and exploring new consumer audiences.

This program will help you enhance your understanding of marketing fundamentals to build customer connections through targeted messaging and advertising. Your course work will introduce theories and case studies, exploring ways to influence behavior and drive customers to make purchase decisions. You may explore the latest trends in technology and new media, their effect on marketing goods and services, and how to deliver value using the latest technologies. You may also expand your knowledge of mobile platforms, branding, social networks, and technology adoption in emerging markets.

Once you have completed your D'Amore-McKim Graduate Certificate in Marketing, endless opportunities lie ahead. Apply to a master's degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/marketing?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcm-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
MKTG 6200	Creating and Sustaining Customer Markets	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following: 9		
MKTG 6212	International Marketing	
MKTG 6214	New Product Development	
or TECE 6250	Lean Design and Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	
MKTG 6224	B2B and Strategic Sales	
MKTG 6226	Consumer Behavior	
MKTG 6260	Special Topics in Marketing	

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits
Minimum 3.000 GPA required

Marketing—Online Program, Graduate Certificate

Through our 100 percent online Graduate Certificate in Marketing, you will have the opportunity to gain the core knowledge and skills necessary to carry out essential marketing functions—from branding new products to advertising services and exploring new consumer audiences.

This program is designed to help you enhance your understanding of marketing fundamentals to build customer connections through targeted messaging and advertising. Your course work will introduce theories and case studies, exploring ways to influence behavior and drive customers to make purchase decisions. You may explore the latest trends in technology and new media, their effect on marketing goods

and services, and how to deliver value using the latest technologies. You may also expand your knowledge of mobile platforms, branding, social networks, and technology adoption in emerging markets.

Once you have completed your online Graduate Certificate in Marketing, endless opportunities lie ahead. The credits you have already earned may be applied toward an eligible master's degree program, including the online MBA, or you may opt to explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
MKTG 6200	Creating and Sustaining Customer Markets	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following:		
MKTG 6212	International Marketing	9
MKTG 6214	New Product Development	
MKTG 6216	Market Focused Strategy	
MKTG 6218	Marketing in Service Sector	
MKTG 6222	Digital Marketing	
MKTG 6223	Brand and Advertising Management	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Mutual Fund Management, Graduate Certificate

Accelerate your career with a Graduate Certificate in Mutual Fund Management.

With our Graduate Certificate in Mutual Fund Management, you will have a chance to further your analytical knowledge and lay the groundwork to perform managerial tasks related to the management and operations of mutual funds. You may choose to explore topics like reconsideration of the fund's investment policy statement and asset allocation plan, preparation of accounting statements, compliance issues, ethical concerns, or measuring and managing risk.

Through successful completion of your Graduate Certificate in Mutual Fund Management, you will earn credits that may be applied to eligible master's programs, both within D'Amore-McKim School of Business or in the College of Professional Studies. Upon acceptance to one of the eligible degree programs, you may be able to apply the credits you have already earned toward the completion of your degree.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/mutual-fund-management?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcmfm-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 12 semester hours from the following:		
FINA 6200	Value Creation through Financial Decision Making	3
FINA 6202	Analysis of Financial Institutions and Markets	3
FINA 6203	Investment Analysis	3
FINA 6212	Fixed Income Securities and Risk	3
FINA 6219	Portfolio Management	3
FINA 6360 or FINA 6361	Fund Management for Analysts Fund Management for Managers	1

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits
Minimum 3.000 GPA required

Supply Chain Management, Graduate Certificate

Are you ready to develop effective strategies to help differentiate a company through efficient and effective supply chain management?

Understanding the most reliable, cost-effective ways to source materials, assemble products, manage inventory, and deliver products to customers has always been essential to business success. As all businesses have become increasingly global and advances in information technology continue to reshape manufacturing, transportation, inventory control, and customer relationship management, supply chain management has become an even more fascinating and rewarding field. Through this program, you will take four or five classes to assist you in developing your career knowledge and potential.

Once you have completed your D'Amore-McKim Graduate Certificate in Supply Chain Management, endless opportunities lie ahead. Apply to a full master's degree program and the credits you have already earned may be applied toward an eligible program, or explore new opportunities for career growth.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/supply-chain-management?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcscm-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
SCHM 6201	Operations and Supply Chain Management	3
SCHM 6213	Global Supply Chain Strategy	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following: 6		
SCHM 6211	Logistics and Transportation Management	
SCHM 6214	Sourcing and Procurement	
SCHM 6215	Supply Chain Analytics	
SCHM 6221	Sustainability and Supply Chain Management	
SCHM 6223	Managing Healthcare Supply Chain Operations	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Supply Chain Management—Online Program, Graduate Certificate

Are you ready to develop effective strategies to help differentiate a company through efficient and effective supply chain management?

Understanding the most reliable, cost-effective ways to source materials, assemble products, manage inventory, and deliver products to customers has always been essential to business success. As all businesses have become increasingly global and advances in information technology continue to reshape manufacturing, transportation, inventory control, and customer relationship management, supply chain management has become an even more fascinating and rewarding field. Through this 100 percent online program, you will take four or five classes to assist you in developing your career knowledge and potential.

Once you have completed your online Graduate Certificate in Supply Chain Management, endless opportunities lie ahead. Apply to an eligible master's degree program, including the online MBA, and the credits you have already earned may be applied to that program, or you may opt to explore new opportunities for career growth.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
SCHM 6201	Operations and Supply Chain Management	3
SCHM 6213	Global Supply Chain Strategy	3

Electives

Code	Title	Hours
Complete two of the following: 6		
SCHM 6211	Logistics and Transportation Management	
SCHM 6214	Sourcing and Procurement	
SCHM 6221	Sustainability and Supply Chain Management	

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Technological Entrepreneurship, Graduate Certificate

Are you interested in developing a startup?

This specialized program will help you build the foundational business knowledge required to commercialize theories you have or products you are developing and bring your innovative ideas to the next level. Through this program, you will take four or five classes to assist you in developing your knowledge and entrepreneurial potential.

Through successful completion of the Graduate Certificate in Technological Entrepreneurship, you will earn credits that may be applied to eligible master's programs. Once you have applied and been accepted to the Master of Science in Technological Entrepreneurship, then the credits you've earned during your certificate program will apply. Not only that, but your performance in the courses can make you eligible to waive the GRE/GMAT requirement. Upon successful completion of a graduate certificate on campus, international students may even apply for up to 12 months of OPT work authorization in the United States.

Learn more about this program (http://www.damore-mckim.northeastern.edu/academic-programs/certificates/technological-entrepreneurship?utm_source=neu-course-catalog&utm_medium=referral&utm_campaign=gcte-mofu) on the D'Amore-McKim website.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ENTR 6200	Enterprise Growth and Innovation	3
ENTR 6212	Business Planning for New Ventures	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following: 6		
ENTR 6218	Business Model Design and Innovation	
ENTR 6219	Financing Ventures from Early Stage to Exit	
ENTR 6222	Competing in Dynamic, Innovation-Driven Markets	
TECE 6222	Emerging and Disruptive Technologies	
TECE 6230	Entrepreneurial Marketing and Selling	
TECE 6250	Lean Design and Development	
TECE 6300	Managing a Technology-Based Business	
TECE 6340	The Technical Entrepreneur as Leader	

Program Credit/GPA Requirements

12 total semester hours required, may take a maximum of 15 credits
Minimum 3.000 GPA required

College of Computer and Information Science

Website (<http://www.ccis.northeastern.edu>)

Carla E. Brodley, PhD, Dean

Bryan Lackaye, EdD, Associate Dean for Graduate School Administration
Rajmohan Rajaraman, PhD, Associate Dean and Director of Graduate Studies

Karen Rosen, MEd, Director of Graduate Co-op Program

202 West Village H
 617.373.6840
gradschool@ccs.neu.edu

At the College of Computer and Information Science (CCIS), we are inspired by our information-driven world and strive to make it a better place. Our students engage in rigorous learning and real-world co-op experiences. Our renowned faculty shapes minds, sparks innovation, and inspires ideas. Our interdisciplinary research breaks new ground to solve everyday problems.

CCIS maintains a strong research program with significant funding from the major federal research agencies and private industry. With a substantial increase in faculty strength and research funding in recent years, we are actively seeking highly motivated, bright, hardworking students who are interested in pursuing a PhD degree in computer science or in the interdisciplinary field of information assurance, network science, or personal health informatics. Graduate students and faculty members are involved in exciting projects in a wide range of research areas, including programming languages, software engineering, distributed and parallel computing, cryptography, network security, health informatics, network science, databases, information retrieval, and artificial intelligence. Colloquia and weekly research seminars contribute to the vibrant research atmosphere in the college.

Our curriculum encompasses both the breadth and depth needed for graduate school. Specialized, advanced courses for PhD students in computer science, information assurance, and personal health informatics are designed to prepare all students for research early in their doctoral education.

The MS curriculum in computer science combines the study of basic algorithms and theoretical computer science principles with advanced programming and software design methods. It offers students the opportunity to develop the analytical and problem-solving skills needed to pursue challenging professional careers.

In addition, we offer five interdisciplinary master's degree programs: the Master of Science in Health Informatics program, which seeks to prepare graduates to use information technology to improve healthcare delivery and outcomes; the Master of Science in Information Assurance program, which focuses on information technology and incorporates the understanding of the social sciences, law, criminology, and management needed to prevent and combat cyberattacks; the Master of Science in Data Science program, which is designed to give students a comprehensive framework for processing, modeling, analyzing, and reasoning about data; the Master of Science in Health Data Analytics program, which prepares students to succeed in an emerging field at the intersection of health informatics, data science, and computational modeling; and the Master of Science in Game Science and Design, which gives students a comprehensive understanding of how successful game products are created in a player-centric environment.

The Align program enables intellectually curious students to earn a Master of Science in Computer Science without a background in the field. Regardless of undergraduate major or current experience, Align's custom curricula prepares students for high-demand industries.

Three student laboratories house a mix of Linux and Windows workstations and separate research lab facilities. In addition, the Information Assurance Laboratory provides students with hands-on experience in information assurance exercises in an isolated network environment.

Our college is a tightly knit community, and the faculty, staff, and students interact regularly through yearly town hall meetings, weekly teas, and seminars. A diverse, multicultural graduate student body and faculty members encourage rich extracurricular interaction. The student chapter of the Association for Computing Machinery organizes a number of social events to promote friendship and camaraderie within the CCIS community.

Academic Policies and Procedures

- Absenteeism (p. 99)
- Academic Integrity (p. 99)
- Academic Probation and Dismissal (p. 100)
- Transfer of Credit (p. 100)

Absenteeism

Students are expected to attend all classes and lab sections for their registered courses. Any student who anticipates missing a class due to illness or emergency situations is expected to contact their professor as soon as possible.

While students are welcome to travel over winter and summer breaks, the College of Computer and Information Science expects students to return to campus in a timely manner and to be present for the first week of classes each term. Students who do not arrive back to campus on time may be dropped from their classes until they return to campus. The Office of the Registrar posts current and future academic calendars (<https://registrar.northeastern.edu/article/calendar-2017-2018>) on their website so travel plans can be made accordingly.

Further, students who are hired as teaching assistants will forfeit their position if they are not present on campus for TA training, which takes place in the first week of classes.

ACADEMIC INTEGRITY

College Academic Integrity Committee and Policy

The college has formed academic integrity committees for each of the doctoral and master's programs in order to assess violations in light of the unique nature of each program. It is necessary that academic integrity violations be considered at the program level given the distinctive requirements of each level of student.

The overriding goal of the committee is to enforce the university's academic integrity policy utilizing the highest level of content expertise necessary to make the most informed decision. Much like the Office of

Student Conduct and Conflict Resolution (OSCCR), the academic integrity committee will consider all cases submitted by CCIS faculty, conduct interviews with students and faculty, as well as gather all relevant academic information to evaluate the situation in question.

The committee will issue decisions on graduate student standing. Judgments will include but not be limited to written warnings, program suspension, co-op and/or internship removal, and program dismissal. The committee reserves the right to act in the best interest of the college, academic program, faculty, and student. As such, decisions on student standing will be made in full consideration of the evidence and may be more lenient or severe than those issued by university bodies, such as OSCCR.

In accordance with university policy, the college has final discretion over academic performance decisions.

Academic Probation and Dismissal

A student whose overall GPA falls below 3.000 will be automatically placed on academic probation and will be notified by the college. Once on probation, a student has one academic semester (summer excluded) to achieve a 3.000 GPA. If the GPA is still unsatisfactory at the end of that semester, the student will be eligible for dismissal from the graduate program.

Students should refer to their program's requirements page regarding the core GPA requirement.

Transfer of Credit

A maximum of 9 semester hours of credit obtained at another institution may be accepted toward the degree, provided the credits meet the following criteria:

- Work is completed at the graduate level for graduate credit
- Student received a grade of 3.000 or better
- Credits were earned at an accredited institution
- Credits have not been used toward any other degree

Transfer credit will be offered only for courses that match a course offered at Northeastern University and that have been approved by the graduate committee. However, no transfer credit will be given for courses listed as Interdisciplinary courses.

Students can submit a request for transfer of credit after they have begun taking courses in the College of Computer and Information Science (CCIS). Please see your academic advisor for the procedure to submit a request.

Computer Science

At the College of Computer and Information Science (CCIS), we are inspired by an increasingly interconnected society, informed by a rapidly changing job market, and focused on addressing the challenges of a complex world. Our goal is to equip students with knowledge as diverse as it is deep. Our programs provide a strong technical foundation and an essential understanding of computing concepts while integrating computer, data, and information sciences across disciplines and industries.

Our master's degrees are advanced programs that are designed to prepare students to be job ready through a rigorous curriculum,

innovative research, experiential learning, and a collaborative environment rich in faculty expertise.

Our research-driven doctoral programs offer students an opportunity to engage in exciting projects, a vibrant community, and a challenging curriculum that offers breadth and depth in areas both within computer science and across disciplines throughout Northeastern.

Graduate education in computer science also features the top-ranked Northeastern co-op program, enabling students to supplement their classroom education with real-world experience in the field. We have consistently placed more than 95 percent of our students in co-op positions. The college partners with several high-profile companies, including:

- Amazon
- Bloomberg
- EMC Corporation
- Fidelity Investments
- IBM Corporation
- Intuit
- Kronos
- MathWorks
- Microsoft
- Nokia
- Phase Forward
- SeaChange International
- Verizon Communications

Programs

Doctor of Philosophy (PhD)

- Computer Science (p. 100)
- Computer Science—Advanced Entry (p. 103)

Master of Science (MS)

- Data Science (p. 104)
- Health Data Analytics (p. 105)

Master of Science in Computer Science (MSCS)

- Computer Science (p. 106)
- Computer Science—Align Program (p. 107)

Graduate Certificate

- Computer Science (p. 108)
- Data Analytics (p. 109)

Computer Science, PhD

Academic Requirements for PhD in Computer Science

A minimum of 48 semester hours of course work beyond the BS/BA degree is required of all students.

Admission to Candidacy

All students must demonstrate sufficient knowledge in the fundamentals of computer science, as well as the ability to carry out research in an area of computer science.

The student must maintain a minimum grade-point average (GPA) of 3.500 among the six core courses satisfying the above course requirements and receive a grade of B or better in each of these courses.

Students who have taken equivalent courses in other institutions may petition to be exempted from the course(s) (subject to the approval of the PhD CS curriculum committee). Each student may repeat a course once for no more than three out of the six courses if they do not receive a B or better in the course. Students with an Master of Science in Computer Science may petition to the PhD CS curriculum committee for an exemption from these courses. Petition forms are available on the college website.

The fields listed do not necessarily represent areas of specialization or separate tracks within the PhD program. Rather, they attempt to delineate areas on which the student must be examined in order to measure his or her ability to complete the degree. Therefore, they may be adjusted in the future to reflect changes in the discipline of computer science and in faculty interests within the College of Computer and Information Science (CCIS). Similarly, these fields do not represent the only areas in which a student may write his or her dissertation. They are, however, intended to serve as a basis for performing fundamental research in computer science.

Paper Requirement

To demonstrate research ability, the student is required to submit to the PhD committee a research or a survey paper in an area of specialty under the supervision of a faculty advisor. A submitted paper from a student is considered to have fulfilled the paper requirement if:

1. The paper has been submitted to a selective conference.
2. The student has made a substantial contribution to the paper.
3. The advisor has endorsed the paper with a written statement indicating the student's contribution.
4. The PhD CS curriculum committee has voted on a positive recommendation. The committee may require a presentation from the student before making a recommendation.

Upon completion of the course and the research paper requirements, the student is admitted to candidacy for the PhD degree. It is highly recommended that the student complete the candidacy requirement by the end of his or her second year but no later than the third year.

Residency

One year of continuous full-time study is required after admission to the PhD candidacy. It is expected that during this period the student will make substantial progress in preparing for the comprehensive examination.

Teaching Requirement

All computer science PhD students must satisfy the teaching requirement in order to graduate. This requirement is fulfilled when the student works as a teaching assistant (TA) or instructor of record (IoR) for one semester and during this semester:

- Teaches at least 3 hours of classes
- Prepares at least one assignment, or quiz, or equivalent

PhD students are expected to satisfy the teaching requirement some time after completing their first year and at least one semester prior to scheduling their PhD defense.

Comprehensive Examination/Dissertation Proposal

The examination is taken after the student has achieved sufficient depth in a field of study in order to prepare a prospectus for the PhD dissertation. This process should take place no later than the end of the fifth year in residence. Prior to taking the examination, the student prepares a dissertation proposal, which describes the proposed research,

including the relevant background materials from the literature. The proposal should clearly specify the research problems to be attacked, the techniques to be used, and a schedule of milestones toward completion.

The dissertation proposal must be approved by the dissertation committee. With the help of the advisor, a student selects the committee, consisting of at least four members, to be approved by the PhD CS curriculum committee. The four members must include the advisor, two internal members, and an external examiner.

Upon approval of the written proposal, the student has to present the proposed work orally in a public forum, followed by a closed-door oral examination from the dissertation committee. The student may take the dissertation proposal examination twice, at most.

Doctoral Dissertation

Upon successful completion of solving the research proposed in the dissertation proposal, the candidate has an opportunity to prepare the dissertation for approval by the dissertation committee. The dissertation must contain results of extensive research and make an original contribution to the field of computer science. The work should give evidence of the candidate's ability to carry out independent research. It is expected that the dissertation should be of sufficient quality to merit publication in a reputable journal in computer science.

DOCTORAL COMMITTEE

With the help of the advisor, a student selects the committee, consisting of at least four members, to be approved by the PhD CS curriculum committee. The four members must include the advisor, two internal members, and an external examiner.

DISSERTATION DEFENSE

The dissertation defense is held in accordance with the regulations of the University Graduate Council. It consists of a lecture given by the candidate on the subject matter of the dissertation. This is followed by questions from the dissertation committee and others in attendance concerning the results of the dissertation as well as any related matters. The examination is chaired by the PhD advisor.

TIME AND TIME LIMITATION

After the establishment of degree candidacy, a maximum of five years will be allowed for the completion of the degree requirements, unless an extension is granted by the college graduate committee.

LEARNING OUTCOMES

Students graduating with a PhD in Computer Science must:

- Gain a broad understanding of computer science fundamentals, spanning a substantial portion of the following core areas: artificial intelligence and data science, human-centered computing, software, systems, and theory.
- Gain significant expertise in at least one research area in computer science.
- Produce and defend original research in an area of computer science.
- Be able to communicate research results effectively in both oral and written forms.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Course requirements
Paper requirement
Dissertation proposal

Dissertation defense

Core Requirements

A grade of B or higher is required in each course. A cumulative 3.500 GPA is required for the core requirement.

Code	Title	Hours
Breadth Areas		
Complete one course from four of the five following breadth areas:		16
<i>Artificial Intelligence and Data Science</i>		
CS 6140	Machine Learning	
<i>Human-Centered Computing</i>		
CS 7340	Theory and Methods in Human Computer Interaction	
CS 7250	Information Visualization: Theory and Applications	
<i>Software</i>		
CS 7400	Intensive Principles of Programming Languages	
CS 6410	Compilers	
<i>Systems</i>		
CS 7600	Intensive Computer Systems	
<i>Theory</i>		
CS 7800	Advanced Algorithms	
CS 7805	Theory of Computation	

Specialization Courses

Complete 8 semester hours from the specialization course lists. (p. 102) 8

Electives

Code	Title	Hours
Complete 24 semester hours in the following:		24
Note: Consult faculty advisor for the other acceptable courses.		
CS 5100 to CS 5850, except CS 5340		
CS 6110 to CS 6810		
CS 7340	Theory and Methods in Human Computer Interaction	
CS 8982	Readings	

Dissertation

Code	Title	Hours
Upon achieving PhD candidacy, complete the following (repeatable) courses for two consecutive semesters:		
CS 9990	Dissertation	
CS 8982	Readings	
For remaining semester(s), complete the following (repeatable) course until graduation:		
CS 9996	Dissertation Continuation	

Specialization Course Lists

Code	Title	Hours
Artificial Intelligence		
CS 5100	Foundations of Artificial Intelligence	
CS 5335	Robotic Science and Systems	
CS 6120	Natural Language Processing	

CS 6140	Machine Learning
CS 7140	Advanced Machine Learning
CS 7180	Special Topics in Artificial Intelligence
Computer-Human Interface	
CS 5520	Mobile Application Development
CS 6350	Empirical Research Methods
CS 7260	Visualization for Network Science
CS 7295	Special Topics in Data Visualization
CS 7340	Theory and Methods in Human Computer Interaction
Data Science	
CS 5200	Database Management Systems
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6240	Large-Scale Parallel Data Processing
CS 7140	Advanced Machine Learning
CS 7280	Special Topics in Database Management
CS 7290	Special Topics in Data Science
Graphics	
CS 5310	Computer Graphics
CS 5330	Pattern Recognition and Computer Vision
Information Security	
CS 5770	Software Vulnerabilities and Security
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7580	Special Topics in Software Engineering
CS 7810	Foundations of Cryptography
Networks	
CS 5700	Fundamentals of Computer Networking
CS 6710	Wireless Network
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7775	Seminar in Computer Security
CS 7780	Special Topics in Networks
Programming Languages	
CS 5400	Principles of Programming Language
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 7400	Intensive Principles of Programming Languages
CS 7480	Special Topics in Programming Language
CS 7485	Special Topics in Formal Methods
Software Engineering	
CS 5610	Web Development
CS 6510	Advanced Software Development
CS 7580	Special Topics in Software Engineering
Systems	

CS 6620	Fundamentals of Cloud Computing
CS 6650	Building Scalable Distributed Systems
CS 6740	Network Security
CS 7600	Intensive Computer Systems
CS 7610	Foundations of Distributed Systems
CS 7680	Special Topics in Computer Systems

Theory

CS 6750	Cryptography and Communications Security
CS 6800	Application of Information Theory
CS 7485	Special Topics in Formal Methods
CS 7800	Advanced Algorithms
CS 7805	Theory of Computation
CS 7880	Special Topics in Theoretical Computer Science

Game Design

CS 5150	Game Artificial Intelligence
CS 5310	Computer Graphics
CS 5340	Computer/Human Interaction
CS 5850	Building Game Engines
CS 7140	Advanced Machine Learning

Program Credit/GPA Requirements

48 total semester hours required

Minimum overall 3.000 GPA required

Plan of Study**Sample Curriculum****Year 1**

Fall	Hours	Spring	Hours
Breadth course	4	Breadth course	4
Core elective	4	Core elective	4
8		8	

Year 2

Fall	Hours	Spring	Hours
Breadth course	4	Breadth course	4
Open elective	4	Open elective	4
8		8	

Year 3

Fall	Hours	Spring	Hours
CS 9990	4	CS 9990	4
CS 8982	4	CS 8982	4
8		8	

Year 4

Fall	Hours	Spring	Hours
CS 9996	0	CS 9996	0
0		0	

Year 5

Fall	Hours	Spring	Hours
CS 9996	0	CS 9996	0
0		0	

Year 6

Fall	Hours	Spring	Hours
CS 9996	0	CS 9996	0
0		0	

Total Hours: 48

Computer Science, PhD—Advanced Entry**Academic Requirements for Advanced-Entry PhD in Computer Science**

A minimum of 16 semester hours of course work beyond the master's degree (excluding the six required core courses) is required of all students.

Admission to Candidacy

Refer to the Computer Science, PhD, overview for admission to candidacy requirements.

Paper Requirement

Refer to the Computer Science, PhD, overview, for research/survey paper requirements.

Residency

Refer to the Computer Science, PhD, overview, for residency requirements.

Comprehensive Examination/Dissertation Proposal

Refer to the Computer Science, PhD, overview, for comprehensive examination requirements.

Doctoral Dissertation

Refer to the Computer Science, PhD, overview, for doctoral dissertation and completion requirements.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Course requirements
Paper requirement
Comprehensive exam/dissertation proposal
Dissertation Defense

Core Requirements

Complete 16 semester hours of approved course work. Consult your faculty advisor for acceptable courses. Students must maintain a minimum GPA of 3.500 as well as earn a grade of B or better in each course.

Dissertation

Code	Title	Hours
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Upon achieving PhD candidacy, complete the following (repeatable) courses for two consecutive semesters:

CS 9990	Dissertation	
CS 8982	Readings	

For remaining semester(s), complete the following (repeatable) course until graduation:

CS 9996	Dissertation Continuation	
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Program Credit/GPA Requirements

16 total semester hours required
Minimum overall 3.000 GPA required

Data Science, MS

The College of Computer and Information Science (CCIS) and the Department of Electrical and Computer Engineering (ECE) jointly offer a new interdisciplinary Master of Science program in data science. This program is designed to give students a comprehensive framework for processing, analyzing, modeling, and reasoning about data. Students will engage in an extensive course work intended to develop depth in data collection, storage, retrieval, processing, modeling, and visualization. Students will also be able to choose elective courses from a variety of offerings in CCIS, the College of Engineering (COE), and throughout the campus to explore areas that generate data, or specialized data science applications. Successful program graduates will be well positioned to attain data scientist and data engineer positions in a fast-growing field or to progress into doctoral degrees in related disciplines.

Course Requirements

The Master of Science in Data Science curriculum requires five core courses that jointly represent the essential technical skills in data science. Two courses in algorithms and data processing examine foundational concepts and languages, focusing on data representation, storage, manipulation, and query, as well as large-scale computing and optimization. Two core courses in machine learning and data mining introduce concepts on data modeling, representation, uncovering associations, and making predictions. The capstone course presents a holistic view of data science. Through experiential learning, students are exposed to the real-world challenges of implementing data science techniques to solve meaningful problems and effectively communicate with data. The courses are tailored toward technically or mathematically trained students.

The five core courses include:

- Two core courses in algorithms and data processing
- Two core courses in machine learning and data mining
- One core course in information visualization

Three elective courses are drawn from a selection of courses across Northeastern.

Learning Outcomes

Students who complete the MS degree will be able to:

- Collect data from numerous sources (databases, files, XML, JSON, CSV, and Web APIs) and integrate them into a form in which the data is fit for analysis
- Use R and Python to explore data, produce summary statistics, perform statistical analyses; use standard data mining and machine-learning models for effective analysis
- Select, plan, and implement storage, search, and retrieval components of large-scale structure and unstructured repositories
- Retrieve data for analysis, which requires knowledge of standard retrieval mechanisms such as SQL and XPath, but also retrieval of unstructured information such as text, image, and a variety of alternate formats
- Match the methodological principles and limitations of machine learning and data mining methods to specific applied problems and

communicate the applicability and the advantages/disadvantages of the methods in the specific problem to nondata experts

- Carry out the full data analysis workflow, including unsupervised class discovery, supervised class comparison, and supervised class prediction; Summarize, interpret, and communicate the analysis of results
- Organize visualization of data for analysis, understanding, and communication; choose appropriate visualization method for a given data type using effective design and human perception principle
- Develop methods for modeling, analyzing, and reasoning about data arising in one or more application domains such as social science, health informatics, web and social media, climate informatics, urban informatics, geographical information systems, business analytics, bioinformatics, complex networks, public health, and game design
- Manage, process, analyze, and visualize data at scale. This outcome allows students to handle data where the conventional information technology fail.

Placement Exams

Each incoming masters student, regardless of his or her background, takes two placement exams administered one week prior to the beginning of the semester. The two exams cover fundamentals of computer science and programming skills and basic statistics, probability, and linear algebra. If the student does not get a B or above in a part of the placement exam, then the student must take the corresponding introductory course.

- Introduction to Programming for Data Science (DS 5010) The introductory course on fundamentals of programming and data structures covers data structures (lists, arrays, trees, hash tables, etc.), program design, programming practices, testing, debugging, maintainability, data collection techniques, and data cleaning and preprocessing. This course will have a class project where the students will use the concepts they learn to collect data from the web, clean, and preprocess and ready for analysis.
- Introduction to Linear Algebra and Probability for Data Science (DS 5020) The introductory course on basics of statistics, probability, and linear algebra covers random variables, frequency distributions, measures of central tendency, measures of dispersion, moments of a distribution, discrete and continuous probability distributions, chain rule, Bayes' rule, correlation theory, basic sampling, matrix operations, trace of a matrix, norms, linear independence and ranks, inverse of a matrix, orthogonal matrices, range and null space of a matrix, the determinant of a matrix, positive semidefinite matrices, eigenvalues and eigenvectors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative GPA of 3.000 or higher is required in the following core courses:

Code	Title	Hours
Algorithms		
Complete 4 semester hours from the following:		4
CS 5800	Algorithms	
EECE 7205	Fundamentals of Computer Engineering	

Data Management and Processing

DS 5110	Introduction to Data Management and Processing	4
Machine Learning and Data Mining		
DS 5220	Supervised Machine Learning and Learning Theory	4
DS 5230	Unsupervised Machine Learning and Data Mining	4
Presentation and Visualization		
DS 5500	Information Visualization: Applications in Data Science	4

Electives

Code	Title	Hours
Complete 12 semester hours from the following:		12

College of Computer and Information Science

CS 5100	Foundations of Artificial Intelligence
CS 6120	Natural Language Processing
CS 6200	Information Retrieval
CS 6350	Empirical Research Methods
CS 7180	Special Topics in Artificial Intelligence
CS 7280	Special Topics in Database Management

College of Engineering

CIVE 7388	Special Topics in Civil Engineering
EECE 5639	Computer Vision
EECE 5640	High-Performance Computing
EECE 7337	Information Theory
EECE 7360	Combinatorial Optimization
EECE 7370	Advanced Computer Vision
EECE 7397	Advanced Machine Learning
IE 5640	Data Mining for Engineering Applications
IE 7275	Data Mining in Engineering
IE 7280	Statistical Methods in Engineering

College of Social Sciences and Humanities

PPUA 5261	Dynamic Modeling for Environmental Decision Making
PPUA 5262	Big Data for Cities
PPUA 5263	Geographic Information Systems for Urban and Regional Policy
PPUA 5266	Urban Theory and Science
PPUA 7237	Advanced Spatial Analysis of Urban Systems
POLS 7200	Perspectives on Social Science Inquiry
POLS 7201	Research Design
POLS 7202	Quantitative Techniques

D'Amore-McKim School of Business

BUSN 6320	Business Analytics Fundamentals
BUSN 6324	Predictive Analytics for Managers

College of Science

MATH 7340	Statistics for Bioinformatics
PHYS 5116	Complex Networks and Applications
PHYS 7305	Statistical Physics
PHYS 7321	Computational Physics
PHYS 7331	Network Science Data

Bouvé College of Health Sciences

NRSB 5121	Epidemiology and Population Health
PHTH 5202	Introduction to Epidemiology
PHTH 5210	Biostatistics in Public Health
PHTH 5224	Social Epidemiology

College of Arts, Media and Design

GSND 5110	Game Design and Analysis
GSND 6350	Data-Driven Player Modeling

Note: Students that take electives worth less than 4 credits (i.e., Bouvé, CSSH courses) will register for an accompanying data science project course in the same semester to bring the cumulative credits to 4. In order to earn this additional credit, students will be expected to work with faculty to design an additional project in line with the curricular aims of their chosen elective and the data science core learning outcomes.

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Health Data Analytics, MS

The digitization of healthcare systems in clinical settings, in combination with the explosion of personal data collection devices, provides the opportunity of using data for revolutionizing approaches to care at all levels with an emphasis on precision medicine and person-centered care. The ability to take advantage of this “Big Data” opportunity, however, requires expertise at the intersection of health informatics, data science, and computational modeling. The Master of Science in Health Data Analytics is designed to prepare students to succeed in this emerging field. This program offers a strong, competency-based curriculum that addresses data analytics ranging from data acquisition from traditional and emerging data streams, data aggregation methods, data mining algorithms, predictive computational modeling, and visualization techniques. Students can expect to amass a broad and deep understanding of the various methods, software tools, and topical expertise needed to discover meaningful patterns in health-related data and effectively communicate their implications to a number of diverse stakeholders. Successful graduates of the Master of Science in Health Data Analytics will be effective practitioners and leaders in the rapidly developing domain of data analytics with a focus on health and healthcare.

The interdisciplinary Master of Science in Health Data Analytics consists of 12 courses, drawn from the College of Computer and Information Science and the Bouvé College of Health Science; a capstone project; and an ongoing series of seminars on topics in health data analytics. Two tracks will be available to matriculating students: standard and research based.

LEARNING OUTCOMES

- Proficiency in the health and healthcare ecosystem, including stakeholder roles such as payers, providers, and government; social determinants of health; wellness promotion; acute vs. chronic care
- Ability to acquire, store, and validate data; familiarity with common health-related data sources and formats
- Proficiency in analyzing data using statistical, epidemiological, and data-mining methods along with appropriate software tools and programming languages
- Ability to interpret and present analytical results to nontechnical stakeholders using visualization and accessible narrative structures

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Analytics/Modeling/Statistics		
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
HINF 6400	Introduction to Health Data Analytics	3
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
Healthcare		
HINF 5102	Data Management in Healthcare	3
HINF 5105	The American Healthcare System	3
HINF Predictive Analy (TBA)		3

¹ Please see college administrator for course information.

Thesis/Capstone

Code	Title	Hours
Complete either Thesis or Capstone:		3
<i>Thesis</i>		
HINF Health Informatics (TBA)	Thesis	
<i>Capstone</i>		
HINF 7701	Health Informatics Capstone Project	

Electives

At least one course must be chosen from the methods list.

Code	Title	Hours
Methods		
Complete 3–6 semester hours from the following:		3-6
PHTH 6202	Intermediate Epidemiology	
PHTH 6210	Applied Regression Analysis	
PHTH 6440	Advanced Methods in Biostatistics	
CS 6350	Empirical Research Methods	
CAEP 7712	Intermediate Statistical Data Analysis Techniques	
CAEP 7716	Advanced Research and Data Analyses 2	

Other Electives

Code	Title	Hours
Complete 0–4 semester hours from the following:		0-4
ARTG 5330	Visualization Technologies 1	
ARTG 6320	Design of Information-Rich Environments	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 6215	Project Management	
HINF 6220	Database Design, Access, Modeling, and Security	

PHTH 5226	Strategic Management and Leadership in Healthcare
PHTH 5232	Evaluating Healthcare Quality
PHTH 5234	Economic Perspectives on Health Policy

Program Credit/GPA Requirements

37 total semester hours required

Minimum 3.000 GPA required

Computer Science, MSCS

Northeastern University's Master of Science in Computer Science is designed to prepare students for a variety of careers in computer science. The program combines both computing and important application domains—enabling you to increase your broad-based knowledge in the field while focusing on one curricular concentration selected from a range of options including artificial intelligence, computer human interaction, graphics, programming languages, software engineering, data science, networks, theory, game design, systems, and information security.

Learning Outcomes

- Exhibit proficiency in the design and maintenance of large application software
- Develop the ability to maintain network infrastructure
- Build familiarity with basic algorithms and theoretical computer science principles
- Demonstrate ability in advanced programming and software design materials

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative 3.000 GPA is required for the three core courses:

Code	Title	Hours
Programming		
CS 5010	Programming Design Paradigm	4
Development		
CS 5500 or CS 5600	Managing Software Development Computer Systems	4
Algorithms		
CS 5800	Algorithms	4

Electives

Complete 20 semester hours from the following. A minimum of 8 semester hours must be taken from the same specialization. 20

CS 5100 to CS 5850	
CS 6110 to CS 6810	
CS 7140 to CS 7380	
CS 7470 to CS 7580	
CS 7670 to CS 7785	
CS 7810 to CS 7880	
CS 8674	Master's Project

CS 8982	Readings
CS 7990	Thesis
Specializations	
<i>Artificial Intelligence</i>	
CS 5100	Foundations of Artificial Intelligence
CS 5335	Robotic Science and Systems
CS 6120	Natural Language Processing
CS 6140	Machine Learning
CS 7140	Advanced Machine Learning
CS 7180	Special Topics in Artificial Intelligence
<i>Computer-Human Interface</i>	
CS 5340	Computer/Human Interaction
CS 6350	Empirical Research Methods
CS 7140	Advanced Machine Learning
<i>Data Science</i>	
CS 5200	Database Management Systems
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6240	Large-Scale Parallel Data Processing
CS 7280	Special Topics in Database Management
CS 7290	Special Topics in Data Science
CS 7295	Special Topics in Data Visualization
<i>Game Design</i>	
CS 5150	Game Artificial Intelligence
CS 5310	Computer Graphics
CS 5340	Computer/Human Interaction
CS 5850	Building Game Engines
CS 7140	Advanced Machine Learning
<i>Graphics</i>	
CS 5310	Computer Graphics
CS 5330	Pattern Recognition and Computer Vision
CS 5520	Mobile Application Development
<i>Information Security</i>	
CS 5770	Software Vulnerabilities and Security
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7485	Special Topics in Formal Methods
CS 7580	Special Topics in Software Engineering
CS 7810	Foundations of Cryptography
<i>Networks</i>	
CS 5700	Fundamentals of Computer Networking
CS 6710	Wireless Network
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7775	Seminar in Computer Security
CS 7780	Special Topics in Networks
<i>Programming Languages</i>	

CS 5400	Principles of Programming Language
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 7480	Special Topics in Programming Language
<i>Software Engineering</i>	
CS 5610	Web Development
CS 6510	Advanced Software Development
CS 6650	Building Scalable Distributed Systems
CS 7580	Special Topics in Software Engineering
<i>Systems</i>	
CS 6740	Network Security
CS 7680	Special Topics in Computer Systems
<i>Theory</i>	
CS 6750	Cryptography and Communications Security
CS 6800	Application of Information Theory
CS 7805	Theory of Computation
CS 7880	Special Topics in Theoretical Computer Science

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Computer Science, MSCS—ALIGN Program

MSCS-Align students come from a wide variety of backgrounds—with undergraduate majors ranging from math, biology, history, engineering, and classics. In this program, students have an opportunity to acquire both the knowledge needed to transition into a new career and the practical skills to build the next great app. In this program, students may learn to:

- Develop the ability to recognize and solve problems arising in modern computing
- Assimilate ideas and concepts from theoretical studies and hands-on design and programming
- Acquire skills in software and application design, network infrastructure, and other dynamic and emerging computer science areas

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
ALIGN Course Work		
<i>Fundamentals</i>		
CS 5001 and CS 5003	Intensive Foundations of Computer Science and Recitation for CS 5001	4
<i>Discrete Structures</i>		
CS 5002	Discrete and Data Structures	4
<i>Object-Oriented Design</i>		

CS 5004 and CS 5005	Object-Oriented Design and Recitation for CS 5004	4
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Additional ALIGN courses

CS 5006	Algorithms	2
CS 5007	Computer Systems	2

Development

CS 5500 or CS 5600	Managing Software Development Computer Systems	4
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Algorithms

CS 5800	Algorithms	4
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Electives

Code	Title	Hours
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Complete 20 semester hours from the following. A minimum of 8 semester hours must be taken from the same specialization. 20

CS 5100 to CS 5850		
CS 6110 to CS 6810		
CS 8674	Master's Project	
CS 8982	Readings	
CS 7990	Thesis	

Specializations*Artificial Intelligence*

CS 5100	Foundations of Artificial Intelligence
CS 5335	Robotic Science and Systems
CS 6120	Natural Language Processing
CS 6140	Machine Learning
CS 7140	Advanced Machine Learning
CS 7180	Special Topics in Artificial Intelligence

Computer-Human Interface

CS 5340	Computer/Human Interaction
CS 6350	Empirical Research Methods
CS 7140	Advanced Machine Learning

Database Management

CS 5200	Database Management Systems
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6240	Large-Scale Parallel Data Processing
CS 7280	Special Topics in Database Management

Game Design

CS 5150	Game Artificial Intelligence
CS 5310	Computer Graphics
CS 5340	Computer/Human Interaction
CS 5850	Building Game Engines
CS 7140	Advanced Machine Learning

Graphics

CS 5310	Computer Graphics
CS 5330	Pattern Recognition and Computer Vision
CS 5520	Mobile Application Development

Information Security

CS 5770	Software Vulnerabilities and Security
CS 6740	Network Security

CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7580	Special Topics in Software Engineering
<i>Networks</i>	
CS 5700	Fundamentals of Computer Networking
CS 6710	Wireless Network
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7775	Seminar in Computer Security
CS 7780	Special Topics in Networks

Programming Languages

CS 5400	Principles of Programming Language
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 7480	Special Topics in Programming Language

Software Engineering

CS 5610	Web Development
CS 6510	Advanced Software Development
CS 6650	Building Scalable Distributed Systems
CS 7580	Special Topics in Software Engineering

Systems

CS 6740	Network Security
CS 7680	Special Topics in Computer Systems

Theory

CS 6750	Cryptography and Communications Security
CS 6800	Application of Information Theory
CS 7805	Theory of Computation
CS 7880	Special Topics in Theoretical Computer Science

Program Credit/GPA Requirements

44 total semester hours required

Minimum 3.000 GPA required

Computer Science, Graduate Certificate

The postbaccalaureate certificate is designed to give students a solid foundation in the mathematical and theoretical underpinnings of computer science, including the areas of discrete mathematics, basic programming, data structures, object-oriented programming, algorithms, and computer systems. The goal of the certificate is to provide foundational knowledge in computer science that is valuable in both the workplace for career advancement, as well as to those looking to move into graduate programs within the discipline.

The Postbaccalaureate Certificate in Computer Science will serve as the foundational premasters' courses in the ALIGN program. Students that successfully complete the five certificate courses with a B in each course or better will be eligible to matriculate into the Master of Science in Computer Science program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CS 5001 and CS 5003	Intensive Foundations of Computer Science and Recitation for CS 5001	4
CS 5002	Discrete and Data Structures	4
CS 5004 and CS 5005	Object-Oriented Design and Recitation for CS 5004	4
CS 5006	Algorithms	2
CS 5007	Computer Systems	2

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Data Analytics, Graduate Certificate

The interdisciplinary Graduate Certificate in Data Analytics is offered through a collaboration between the College of Computer and Information Sciences and the College of Social Sciences and Humanities. The certificate curriculum emphasizes the skills needed to bridge between emerging technological capacities and traditional policymaking processes. The program is designed to provide students with foundational knowledge in data science—including data management, machine learning, data mining, statistics, and visualizing and communicating data—that can be applied to data-driven decision making in any discipline.

For more information on the certificate, refer to the program’s website (<http://www.northeastern.edu/datascience>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Health Informatics

Meet the demand for health informatics professionals

Professionals who understand the relationship between information technology, people, health, and the healthcare system are in short supply. With Northeastern University’s interdisciplinary graduate programs

in health informatics, you have an opportunity to gain the knowledge and skills needed to use information technology to improve healthcare delivery and outcomes—and to advance your career in this growing field.

Northeastern’s health informatics master’s degree and certificate programs seek to provide:

- The expertise of both the College of Computer and Information Science (<http://www.ccs.neu.edu/about>) and Bouvé College of Health Sciences (<http://www.northeastern.edu/bouve>)
- Faculty (<http://www.ccs.neu.edu/graduate/degree-programs/m-s-in-health-informatics/faculty>) who are senior leaders in the field
- The ability to communicate effectively with clinicians, administrators, and IT professionals and to understand each of their needs and constraints
- Strong industry connections
- The opportunity to learn from students with backgrounds in healthcare or technology—nurses, pharmacists, physicians, programmers, project managers, analysts, and others
- Flexible course schedules and formats designed to meet the needs of both working professionals and full-time students
- Research opportunities and an academic lead-in to the PhD in Personal Health Informatics (<http://phi.ccs.neu.edu>)

Whether you want to take on new responsibilities in your current workplace or to launch a new career, Northeastern’s graduate degree and certificate programs in health informatics prepare you for leadership and specialist roles in a variety of health-related organizations. And you’re ready to make an immediate impact on healthcare.

Learning Outcomes

In the program, students will learn data management and analysis; business implementation and management; and how to apply the technical and business knowledge to improving the health care system.

Programs

Doctor of Philosophy (PhD)

- Personal Health Informatics (p. 109)

Master of Science (MS)

- Health Data Analytics (p. 105)
- Health Informatics (p. 112)

Graduate Certificate

- Health Informatics Management and Exchange (p. 294)
- Health Informatics Privacy and Security (p. 294)
- Health Informatics Software Engineering (p. 294)

Personal Health Informatics, PhD

Northeastern’s Doctor of Philosophy (PhD) in Personal Health Informatics (PHI) is a transdisciplinary doctoral program focused on educating top researchers in the theoretical underpinnings, design, evaluation, and dissemination of consumer- and patient-focused health systems. Personal health technologies are those that non–health professionals interact with *directly*, both in and out of a clinical setting and in various life stages of illness and wellness.

Examples include:

- Assistive technologies that aid persons with disabilities
- Consumer wellness promotion technologies

- Patient education and counseling systems
- Interfaces for reviewing personal health records
- Advanced ambulatory monitoring for supporting health
- Automated elder care systems that monitor health and support independent living
- Social networking systems connecting families and their social and medical support networks

Developing personal health interface technologies requires that professionals have skills and experience designing systems for individual patients and consumers with a wide range of backgrounds in different contexts using a variety of media, while ensuring that fielded technologies are effective, reliable, and responsive to the needs of at-risk and patient populations. Critical skills and knowledge include needs assessment, theories of interface design and health behavior, rapid prototyping and implementation, experimental design with human subjects in challenging settings, and statistical data analysis and validation. Moreover, these skills must be deployed while working with, or leading, transdisciplinary teams.

The interdisciplinary nature of the program targets students who are interested in improving health and wellness using novel technologies that directly impact the lives of consumers and patients. This is a program for students who are not only technically strong but also socially conscious, design oriented, and interested in rigorously evaluating the technologies they imagine and build. The program provides a path for technical students to acquire more experience in the deployment and evaluation of health technologies in the field but also a path for students with health backgrounds to develop the technical skills needed to prototype and assess creative ideas they envision for improving care. The expected length of study is five years after the bachelor's degree.

Admission Requirements

Students will be accepted with either of the following:

- A bachelor's or higher degree in a technical discipline (e.g., computer science or information science, computer systems engineering) with either academic or work experience demonstrating a commitment to working in health.
- A bachelor's or higher degree in a health science discipline (e.g., nursing, medicine, physical therapy, pharmacy, public health) with either some academic course work in technology, such as a course in programming or design, or work experience where the applicant participated in the development, adaptation, or evaluation of consumer- or patient-facing health technology. (Otherwise outstanding applicants without programming skills may be advised to take an introductory programming course prior to entry, and otherwise outstanding applicants without any formal experience working in health settings may be advised to spend some time volunteering in a medical or community health setting prior to entry.)

Applicants will be expected to have:

- A minimum 3.000 undergraduate grade-point average (GPA)
- A minimum total GRE score of 300 or equivalent
- A minimum GRE academic writing score of 3.5
- For international applicants, a minimum TOEFL score of 105

Minimum Academic Standards and Requirements

RESIDENCY REQUIREMENT

The residency requirement will follow the University Graduate Council By-Law policy.

DISSERTATION ADVISING

Each student will have one primary advisor from the personal health informatics doctoral program faculty.

DISSERTATION COMMITTEE

The committee will consist of at least three members: the dissertation advisor, one additional personal health informatics doctoral program faculty member, and one member external to Northeastern who is an expert in the specific personal health informatics topic of research. The dissertation committee shall include experts with both health and technology backgrounds. The dissertation advisor must be a full-time member of the Northeastern University faculty.

QUALIFYING EXAMINATION

The qualifying examination consists of a three-part exam conducted by a committee of three personal health informatics doctoral program faculty members, each overseeing one part of the exam. The research core of the exam is fulfilled with submission of a high-quality paper to a strong peer-reviewed conference or journal. The health component of the exam is fulfilled when the student passes a written exam developed by a faculty member with a health sciences background, and the technical component of the exam is fulfilled when the student passes an exam developed by a faculty member with a technical background. The content of the written exams and the paper topic are developed in consultation with each faculty member.

DEGREE CANDIDACY

A student is considered a PhD degree candidate upon meeting these conditions:

- Completion of core courses with a minimum GPA of 3.000 overall on the core courses
- Completion of the qualifying examination

COMPREHENSIVE EXAM

A PhD student must submit a written dissertation proposal to the dissertation committee. The proposal should identify the research problem, the research plan, and its potential impact on the field. A presentation of the proposal will be made in an open forum, and the student must successfully defend it before the dissertation committee.

DISSERTATION DEFENSE

A PhD student must complete and defend a dissertation that involves original research in personal health informatics.

Curriculum Requirements

REQUIRED AND ELECTIVE COURSES

The curriculum is designed to provide all PhD students with a strong foundation in principles critical to the design and evaluation of personal health interfaces. All students take six core courses (24 semester hours) and the user-interface practicum (1 semester hour). All students must also fulfill the programming fundamentals requirement (4 semester hours) and the statistics fundamentals requirement (4 semester hours), where some flexibility in course selection allows tailoring based on background and experience. Two additional research electives (8 semester hours) are selected based on research interests from the personal health informatics electives list. Students are also expected to participate in the personal health informatics seminar series each semester.

Program Assessment

LEARNING OUTCOMES

This program seeks to produce graduates who are capable of leading and performing independent, new research projects related to personal health informatics and who are well prepared to enter into a number of potential

career paths, including industrial research positions, government consultants, or postdoctoral or junior faculty positions in academic institutions in either technology programs or schools of health science, public health, or medicine.

DEGREE OUTCOMES

The dissertation committee evaluates whether the student has produced a significant contribution to personal health informatics research. The process used by the dissertation committee is based on an assessment of the goals and objectives described in the written PhD proposal. Student success can also be measured in the number and quality of publications generated by the research.

IMPROVING EFFECTIVENESS

Publication venues will provide a means to assess the quality of the program, as well as the research projects. External research funding and incoming student quality will be used to measure program strength. In addition, graduates will be asked for feedback concerning their training and program preparation.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examinations (3)
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

Code	Title	Hours
Foundations		
HINF 5200	Theoretical Foundations in Personal Health Informatics	4
Program Design and Development		
CS 5010	Programming Design Paradigm	4
CS 5340	Computer/Human Interaction	4
HINF 5300	Personal Health Interface Design and Development	4
Methods and Statistics		
CS 6350	Empirical Research Methods	4
PHTH 5210	Biostatistics in Public Health	3
Evaluation		
HINF 8982	Readings	1-8
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	4

Electives

Code	Title	Hours
Complete 6 to 8 semester hours in the following subject area: 6-8		
(Note: Please see faculty advisor for other acceptable elective courses.)		
HINF		

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CS 9990	Dissertation	

Program Credit/GPA Requirements

48 total semester hours required
Minimum 3.000 GPA required

Plan of Study Sample Curriculum

Year 1			
Fall	Hours	Spring	Hours
HINF 5200	4	CS 5010 or 5520	4
CS 5340	4	CS 6350	4
		Additionally, students should participate in the Personal Health Informatics Usability Evaluation Practicum	1
		8	9
Year 2			
Fall	Hours	Spring	Hours
HINF 5300	4	HINF 5301	4
PHTH 5210 (or PHTH 6210 or CAEP 7712 or CAEP 7716)	3	PHI elective	3-4
		7	7-8
Year 3			
Fall	Hours	Spring	Hours
HINF 9990	2-4	HINF 9990	2-4
HINF 8982	1-8	PHI elective	3-4
		3-12	5-8
Year 4			
Fall	Hours	Spring	Hours
HINF 9996	0	HINF 9996	0
		0	0
Year 5			
Fall	Hours	Spring	Hours
HINF 9996	0	HINF 9996	0
		0	0

Total Hours: 39-52

Health Data Analytics, MS

The digitization of healthcare systems in clinical settings, in combination with the explosion of personal data collection devices, provides the opportunity of using data for revolutionizing approaches to care at all levels with an emphasis on precision medicine and person-centered care. The ability to take advantage of this "Big Data" opportunity, however, requires expertise at the intersection of health informatics, data science, and computational modeling. The Master of Science in Health Data Analytics is designed to prepare students to succeed in this emerging field. This program offers a strong, competency-based curriculum that addresses data analytics ranging from data acquisition from traditional and emerging data streams, data aggregation methods, data mining algorithms, predictive computational modeling, and visualization techniques. Students can expect to amass a broad and deep understanding of the various methods, software tools, and

topical expertise needed to discover meaningful patterns in health-related data and effectively communicate their implications to a number of diverse stakeholders. Successful graduates of the Master of Science in Health Data Analytics will be effective practitioners and leaders in the rapidly developing domain of data analytics with a focus on health and healthcare.

The interdisciplinary Master of Science in Health Data Analytics consists of 12 courses, drawn from the College of Computer and Information Science and the Bouvé College of Health Science; a capstone project; and an ongoing series of seminars on topics in health data analytics. Two tracks will be available to matriculating students: standard and research based.

LEARNING OUTCOMES

- Proficiency in the health and healthcare ecosystem, including stakeholder roles such as payers, providers, and government; social determinants of health; wellness promotion; acute vs. chronic care
- Ability to acquire, store, and validate data; familiarity with common health-related data sources and formats
- Proficiency in analyzing data using statistical, epidemiological, and data-mining methods along with appropriate software tools and programming languages
- Ability to interpret and present analytical results to nontechnical stakeholders using visualization and accessible narrative structures

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Analytics/Modeling/Statistics		
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
HINF 6400	Introduction to Health Data Analytics	3
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
Healthcare		
HINF 5102	Data Management in Healthcare	3
HINF 5105	The American Healthcare System	3
HINF Predictive Analy (TBA)		3

¹ Please see college administrator for course information.

Thesis/Capstone

Code	Title	Hours
Complete either Thesis or Capstone:		
<i>Thesis</i>		
HINF Health Informatics (TBA)	Thesis	3
<i>Capstone</i>		
HINF 7701	Health Informatics Capstone Project	

Electives

At least one course must be chosen from the methods list.

Code	Title	Hours
Methods		
Complete 3–6 semester hours from the following:		3-6
PHTH 6202	Intermediate Epidemiology	
PHTH 6210	Applied Regression Analysis	
PHTH 6440	Advanced Methods in Biostatistics	
CS 6350	Empirical Research Methods	
CAEP 7712	Intermediate Statistical Data Analysis Techniques	
CAEP 7716	Advanced Research and Data Analyses 2	
Other Electives		
Complete 0–4 semester hours from the following:		0-4
ARTG 5330	Visualization Technologies 1	
ARTG 6320	Design of Information-Rich Environments	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 6215	Project Management	
HINF 6220	Database Design, Access, Modeling, and Security	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	

Program Credit/GPA Requirements

37 total semester hours required
Minimum 3.000 GPA required

Health Informatics, MS

Northeastern's interdisciplinary Master of Science in Health Informatics was the first MS in the field. The program seeks to prepare students to address the combined clinical, technical, and business needs of health-related professionals. Successful students graduate with the knowledge of how technology, people, health, and the healthcare system interrelate; the ability to use technology and information management to improve healthcare delivery and outcomes; and the skills to communicate effectively among healthcare practitioners, administrators, and information technology professionals.

With approval from the health informatics program director, selected students can substitute one course from the Graduate Certificate in Data Analytics for a technical core requirement in the MS in Health Informatics degree, and up to two more courses from the Graduate Certificate in Data Analytics can be counted as electives for the MS in Health Informatics degree.

Northeastern also offers graduate certificate programs in health informatics. Three certificate programs enable you to choose the one that addresses your specific goals. These programs are listed separately in this catalog:

- Graduate Certificate in Health Informatics Management and Exchange

- Graduate Certificate in Health Informatics Privacy and Security
- Graduate Certificate in Health Informatics Software Engineering

Courses in the certificate program also apply toward master's degree requirements. This gives you the flexibility to complete a certificate and be well on your way to earning a degree if you decide later to continue your education.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5105	The American Healthcare System	3
HINF 7701	Health Informatics Capstone Project	3
Business Management		
Complete two courses from the following:		6
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
HINF 6335	Management Issues in Healthcare Information Technology	
HINF 6240	Improving the Patient Experience through Informatics	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two courses from the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
Complete two courses from the following:		6
HINF 6220	Database Design, Access, Modeling, and Security	
HINF 6355	Key Standards in Health Informatics Systems	
HINF 6400	Introduction to Health Data Analytics	
PHTH 5202	Introduction to Epidemiology	
PHTH 5210	Biostatistics in Public Health	
PHTH 6210	Applied Regression Analysis	

PHTH 6400 Principles of Population Health 1

PHTH 6440 Advanced Methods in Biostatistics

One course from the following may count toward the technical core requirement:

DA 5020 Collecting, Storing, and Retrieving Data

DA 5030 Introduction to Data Mining/Machine Learning

PPUA 5301 Introduction to Computational Statistics

PPUA 5302 Information Design and Visual Analytics

Electives

Code	Title	Hours
Complete two courses from the following. Any course not taken to complete a core requirement may be taken as an elective.		
HINF 6345	Design for Usability in Healthcare	6
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

Minimum 33 total semester hours required

Minimum 3.000 GPA required

Information Assurance & Cybersecurity

Students can apply for admission to two distinct degree programs:

Doctor of Philosophy (PhD) in Information Assurance degree. A research-based, interdisciplinary PhD in information assurance combines a strong security technical foundation with a security policy and social sciences perspective. It seeks to prepare graduates to advance the state-of-the-art of security in systems, networks, and the internet in industry, academia, and government. The interdisciplinary nature of the program distinguishes it from traditional doctoral degree programs in computer science, engineering, or social sciences and makes it unique in the Boston area.

Master of Science (MS) in Cybersecurity degree. An industry-focused, interdisciplinary Master of Science in Cybersecurity combines knowledge of information security technology and cybersecurity tools with relevant knowledge from law, the social sciences, criminology, and management. The Master of Science in Cybersecurity is designed for students focused on cybersecurity careers in companies or government agencies, thus applying their knowledge to their workplaces to assess security threats and manage information security risks and technical and policy controls.

MSIA-Align. Students who have a strong desire to pursue a career in cybersecurity but lack a technical background are advised to apply to MSIA-Align. MSIA-Align students enter the Align program with backgrounds in social sciences, business, economics, sciences, and other disciplines. The MSIA-Align courses prepare MSIA-Align students to gain admission to the Master of Science in Cybersecurity.

Northeastern University designations by the National Security Agency (NSA) and the Department of Homeland Security (DHS):

- Center of Academic Excellence in Information Assurance/Cyber Defense Education, with focus area in Cyber Investigations
- Center of Academic Excellence in Information Assurance Research
- Center of Academic Excellence in Cyber Operations

Programs

Doctor of Philosophy (PhD)

- Information Assurance (p. 114)
- Information Assurance—Advanced Entry (p. 115)

Master of Science

- Cybersecurity (p. 116)

Graduate Certificate

- Cybersecurity (p. 117)

Information Assurance, PhD

A research-based, interdisciplinary Doctor of Philosophy (PhD) in Information Assurance combines a strong security technical foundation with a security policy and social sciences perspective. It seeks to prepare graduates to advance the state-of-the-art of security in systems, networks, and the internet in industry, academia, and government. The interdisciplinary nature of the program distinguishes it from traditional doctoral degree programs in computer science, engineering, or social sciences and makes it unique in the Boston area.

Students who choose the PhD in information assurance program have a strong desire to pursue academic research solving critical cybersecurity challenges facing today's society. The PhD program is a natural path for students in the college's Master of Science in Information Assurance and Cybersecurity (<http://www.ccs.neu.edu/graduate/degree-programs/m-s-in-information-assurance>) program who want to pursue research and students with bachelor's degrees and an interest in research-focused careers. Students who pursue careers in advancing the state-of-the-art of cybersecurity have an opportunity to gain:

- A strong technical foundation in cybersecurity and an interdisciplinary perspective based on policy and social science
- A path to a research-focused career coupled with depth in information assurance research at a leading institution, one of the earliest designees by NSA/DHS as a National Center of Academic Excellence (http://www.nsa.gov/ia/academic_outreach/nat_cae/index.shtml) in Information Assurance Research, Information Assurance/Cyber Defense, and Cyber Operations
- The opportunity to work with and learn from faculty who are recognized internationally for their expertise and contributions in information assurance from Northeastern's College of Computer and Information Science, the Department of Electrical and Computer Engineering, and the College of Social Sciences and Humanities
- Access to research projects at Northeastern's research centers focused on security:
 - The Cybersecurity and Privacy Institute (<https://cyber.ccis.northeastern.edu/about>): The mission of Northeastern's Cybersecurity and Privacy Institute is to safeguard critical technology. Forging partnerships with experts in industry,

government, and academia worldwide, the Institute's faculty and students develop, protect, and enhance technologies on which the world relies—from mobile devices and “smart” IoT applications to tomorrow's self-driving cars and delivery drones. Their expertise spans algorithm auditing, cloud security, cryptography, differential privacy, embedded device security, Internet-scale security measurements, machine learning, big data, and security, malware and advanced threats, network protocols and security, Web and mobile security, wireless network security.

- The International Secure Systems Lab (<http://www.iseclab.org>), affiliated with Northeastern, a collaborative effort of European and U.S. researchers focused on web security, malware and vulnerability analysis, intrusion detection, and other computer security issues
- The ALERT Center (<http://www.northeastern.edu/alert>), where Northeastern is the lead institution, a multiuniversity Department of Homeland Security Center of Excellence involved in research, education, and technology related to threats from explosives

The benefits of the Boston area:

- World-renowned for academic and research excellence, the Boston area is also home to some of the nation's largest Department of Defense contractors and government and independent labs such as MIT Lincoln Lab, MITRE, and Draper Lab

Degree Requirements

The PhD in information assurance degree requires completion of at least 48 semester credit hours beyond a bachelor's degree. Students who enter with an undergraduate degree will typically need four to five years to complete the program, and they will be awarded a master's degree en route to the PhD.

Doctoral Degree Candidacy

A student is considered a PhD degree candidate after completing the core courses with at least a 3.400 grade-point average (GPA) and either publishing a paper in a strong conference or journal or passing an oral exam that is conducted by a committee of three information assurance faculty members and based on paper(s) written by the student.

RESIDENCY

One year of continuous full-time study is required after admission to the PhD candidacy. During this period, the student will be expected to make substantial progress in preparing for the comprehensive examination.

DISSERTATION ADVISING

The doctoral dissertation advising team for each student consists of two information assurance faculty members, one in a technical area. When appropriate, the second faculty advisor will be from the policy/social science area.

DISSERTATION COMMITTEE

A PhD student's dissertation committee consists of the two members of the dissertation advising team plus two others: One is a member of the information assurance faculty, and the other is an external examiner who is knowledgeable about the student's research topic.

COMPREHENSIVE EXAMINATION

A PhD student must submit a written dissertation proposal and present it to the dissertation committee. The proposal should identify the research problem, the research plan, and the potential impact of the research on the field. The presentation of the proposal will be made in an open forum,

and the student must successfully defend it before the dissertation committee after the public presentation.

DISSERTATION DEFENSE

A PhD student must complete and defend a dissertation that involves original research in information assurance.

AWARDING OF MASTER'S DEGREES

Students who enter the PhD in information assurance program with a bachelor's degree have the option of obtaining a master's degree from one of the departments participating in the program. To do so, they must meet all of the department's degree requirements.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying exam and area exam
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

A cumulative 3.400 GPA is required for the core requirement.

Code	Title	Hours
Fundamentals		
CS 5700 or EECE 7336	Fundamentals of Computer Networking Digital Communications	4
Software		
CS 5770	Software Vulnerabilities and Security	4
Security and Cyberlaw		
CS 6740 or CS 6750	Network Security Cryptography and Communications Security	4
IA 5200	Security Risk Management and Assessment	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4

Electives and Specializations

Code	Title	Hours
Complete 28 semester hours from the following:		28
Consult faculty advisor for other acceptable courses.		
<i>Track 1: Network/Communication Security</i>		
CS 6710	Wireless Network	
EECE 5666	Digital Signal Processing	
<i>Track 2: System Security</i>		
CS 5600 or EECE 7352	Computer Systems Computer Architecture	
IA 6120	Software Security Practices	
<i>Track 3 Policy/Society</i>		
CRIM 7246	Security Management	
POLS 7341	Security and Resilience Policy	
<i>General Electives</i>		
CS 5500	Managing Software Development	
CS 6140	Machine Learning	

CS 6200	Information Retrieval
EECE 7204	Applied Probability and Stochastic Processes
EECE 7205	Fundamentals of Computer Engineering
EECE 7337	Information Theory
SOCL 7211 or CS 6350	Research Methods Empirical Research Methods

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
IA 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
IA 9996	Dissertation Continuation	

Program Credit/GPA Requirements

48 total semester hours required
Minimum 3.000 GPA required

Information Assurance, PhD—Advanced Entry

A research-based, interdisciplinary Doctor of Philosophy (PhD) in Information Assurance combines a strong security technical foundation with a security policy and social sciences perspective. It seeks to prepare graduates to advance the state-of-the-art of security in systems networks and the internet in industry, academia, and government. The interdisciplinary nature of the program distinguishes it from traditional doctoral degree programs in computer science, engineering, or social sciences and makes it unique in the Boston area.

Students who choose the PhD in information assurance program have a strong desire to pursue academic research solving critical cybersecurity challenges facing today's society. The PhD program is a natural path for students in the college's Master of Science in Information Assurance and Cybersecurity program who want to pursue research and students with bachelor's degrees and an interest in research-focused careers. Students who pursue careers in advancing the state-of-the-art of cybersecurity have an opportunity to gain:

- A strong technical foundation in cybersecurity and an interdisciplinary perspective based on policy and social science
- A path to a research-focused career coupled with depth in information assurance research at a leading institution, one of the earliest designees by NSA/DHS as a National Center of Academic Excellence in Information Assurance Research, Information Assurance/Cyber Defense, and Cyber Operations
- The opportunity to work with and learn from faculty who are recognized internationally for their expertise and contributions in information assurance from Northeastern's College of Computer and Information Science, the Department of Electrical and Computer Engineering, and the College of Social Sciences and Humanities
- Access to research projects at Northeastern's research centers focused on security.
- The Institute of Information Assurance (IIA), an interdisciplinary research center overseen by both the College of Computer and Information Science and the department of Electrical and Computer Engineering in the College of Engineering, and the

recipient of a National Science Foundation grant to train the country's next generation of cybercorps

- The International Secure Systems Lab, affiliated with Northeastern, a collaborative effort of European and U.S. researchers focused on web security, malware and vulnerability analysis, intrusion detection, and other computer security issues
- The ALERT Center, where Northeastern is the lead institution, a multiuniversity Department of Homeland Security Center of Excellence involved in research, education, and technology related to threats from explosives

The benefits of the Boston area:

- World renowned for academic and research excellence, the Boston area is also home to some of the nation's largest Department of Defense contractors and government and independent labs such as MIT Lincoln Lab, MITRE, and Draper Lab

Degree Requirements

The PhD in information assurance master entry degree requires completion of at least 16 semester credit hours beyond a bachelor's degree. Students also must complete the required core courses.

Doctoral Degree Candidacy

Refer to the information assurance, PhD, overview for admission to candidacy requirements.

RESIDENCY

Refer to the information assurance, PhD, overview for residency requirements.

DISSERTATION ADVISING

Refer to the information assurance, PhD, overview for dissertation advising requirements.

DISSERTATION COMMITTEE

Refer to the information assurance, PhD, overview for dissertation committee requirements.

COMPREHENSIVE EXAMINATION

Refer to the information assurance, PhD, overview for comprehensive examination requirements.

DISSERTATION DEFENSE

Refer to the information assurance, PhD, overview for dissertation defense and completion requirements.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying exam and area exam
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirement

Complete 16 semester hours of approved course work. A cumulative 3.400 GPA is required for the core requirement. Consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
IA 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
IA 9996	Dissertation Continuation	

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Cybersecurity, MS

Our Master of Science in Cybersecurity combines an understanding of information security technology with relevant knowledge from law, the social sciences, criminology, and management. The MS program is designed for working professionals and recent graduates who want knowledge they can apply in their workplaces to assess and manage information security risks effectively.

Learning Outcomes:

- Building core knowledge surrounding computer system security and network security theory, processes, and practices
- Planning and implementing security strategies to reduce risk and enhance protection of information assets and systems
- Identifying and addressing legal and ethical issues associated with information security, privacy, and digital rights and identifying how they inform specific IA plan/decisions
- Communicating effectively, verbally and in writing, with corporate management on IA-related issues

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Cybersecurity with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Cybersecurity in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The certificate program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 40-semester-hour master's degree and certificate require 24 hours of information assurance course work.

Engineering Leadership (p. 222)

Program Requirements

Core Requirement

Code	Title	Hours
Foundations		
IA 5010	Foundations of Information Assurance	4
Technical Track		
Complete 8 semester hours from the following:		8
IA 5120	Applied Cryptography	
IA 5130	Computer System Security	
IA 5150	Network Security Practices	
IA 6120	Software Security Practices	
Contextual Track		
Complete 8 semester hours from the following:		8

IA 5200	Security Risk Management and Assessment	
IA 5210	Information System Forensics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
IA 5250	Decision Making for Critical Infrastructure	
Capstone		
IA 7900	Capstone Project/Seminar	4

Electives

Code	Title	Hours
Complete 8 semester hours from the following:		8
IA 5040	Introduction to Cyberspace Programming	
IA 5120	Applied Cryptography	
IA 5130	Computer System Security	
IA 5150	Network Security Practices	
IA 5200	Security Risk Management and Assessment	
IA 5210	Information System Forensics	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	
IA 6120	Software Security Practices	
CS 5200	Database Management Systems	
CS 5500	Managing Software Development	
CS 5600	Computer Systems	
CS 5700	Fundamentals of Computer Networking	
CS 5770	Software Vulnerabilities and Security	
CS 6710	Wireless Network	
CS 6740	Network Security ¹	
CS 6750	Cryptography and Communications Security	
CS 7805	Theory of Computation	
CRIM 7312	Special Topics in Criminology and Public Policy	
PPUA 6503	Public Personnel Administration	
PPUA 6505	Public Budgeting and Financial Management	
PPUA 6507	Institutional Leadership and the Public Manager	
POLS 7341	Security and Resilience Policy	

Program Credit/GPA Requirements

32 total semester hours required
 Minimum 3.000 GPA required

¹ Students who took Network Security Practices (IA 5150) (technical track) and are interested in taking Network Security (CS 6740) (approved elective, non-IA course) should inform the network security instructor and the director/associate director of IA.

Cybersecurity, Graduate Certificate

The certificate is designed to give students a solid foundation in cybersecurity. In the course work, students have the opportunity to be exposed to the basic principles and security concepts related to

information systems, to explore issues involved in the security of computer systems, and to explore the techniques used in computer forensic examination. The goal of the certificate is to provide prospective cybersecurity professionals with an entry point to industry positions within eight months from admission and with reduced financial investment.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
IA 5010	Foundations of Information Assurance	4
IA 5130	Computer System Security	4
IA 5210	Information System Forensics	4

Elective

Code	Title	Hours
Complete one of the following:		4
IA 5200	Security Risk Management and Assessment	
IA 5150	Network Security Practices	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	

Program Credit/GPA Requirements

16 total semester hours required
 Minimum 3.000 GPA required

Interdisciplinary

The College of Computer and Information Science features two additional interdisciplinary programs. We partner with the College of Arts, Media and Design to offer the Master of Science in Game Science and Design. We also partner with the College of Social Sciences and Humanities to offer the Graduate Certificate in Data Analytics.

Programs

Master of Science

- Game Science and Design (p. 57)

Graduate Certificate

- Data Analytics (p. 109)

Game Science and Design, MS

The **Master of Science (MS) in Game Science and Design** is a program that seeks to give students a comprehensive understanding of how successful game products are created in a player-centric environment. Focusing on the science of game development, students have an opportunity to learn the design and technological skills needed to build a game and develop a deep understanding of playability and analytics that make products successful in an increasingly competitive marketplace.

The game industry has expanded to include social and mobile gaming; games in health, education, and training; and innovations in play psychology, middleware, graphics tools, game mechanics, game evaluation methods, and advanced artificial intelligence and narrative techniques. It has become an increasingly competitive space.

The selectiveness of the industry and the diversity of the skills required mean that students seeking entry need both broad and deep skills. As an emergent industry using diverse technology and collaborative practices, the game industry needs professionals with interdisciplinary skill sets who can meld knowledge about development with knowledge about evaluation methods and players' behavior and psychology.

Jointly offered by Northeastern's Colleges of Arts, Media and Design and Computer and Information Science (<http://www.ccs.neu.edu>), the **Master in Science in Game Science and Design** is a one-of-a-kind interdisciplinary program that seeks to prepare students to meet this need by weaving together science and design. This is a two-year, 34-credit-hour program.

The degree offers three concentrations:

- Game analytics: focusing on data analysis of gameplay and other game data to make the game successful
- Game user research: focusing on gauging the user experience to enable designers to develop an enjoyable game experience
- Game design and development: focusing on the design or technical side of game development

All admitted students will be assigned to an advisor who will help them select a pathway with a coherent set of electives depending on their career goals. The advisor will also monitor their progress through the master's degree.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
GSND 5110	Game Design and Analysis	4
GSND 5111	Seminar for GSND 5110	1
GSND 5122	Business Models in the Game Industry	1
GSND 5130	Mixed Research Methods for Games	4
or PPUA 5301	Introduction to Computational Statistics	
Thesis		
GSND 7990	Thesis	4

Specializations

In consultation with your faculty advisor, declare one specialization option by spring of your first year.

Complete one of the following specializations:

GAME ANALYTICS

Code	Title	Hours
Complete three of the following: 12		
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

GAME USER RESEARCH

Code	Title	Hours
Complete three of the following: 12		
CS 5340	Computer/Human Interaction	

GSND 6320	Psychology of Play
GSND 6330	Player Experience
GSND 6340	Biometrics for Design

GAME DESIGN AND DEVELOPMENT

Code	Title	Hours
Complete three of the following: 12		
CS 5150	Game Artificial Intelligence	
CS 5850	Building Game Engines	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	

Electives

Note: In consultation with your faculty advisor, you may complete two other related courses offered by all options.

Code	Title	Hours
Complete two of the following: 8		
CS 5150	Game Artificial Intelligence	
CS 5340	Computer/Human Interaction	
CS 5850	Building Game Engines	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
GSND 6240	Exploratory Concept Design	
GSND 6250	Spatial and Temporal Design	
GSND 6320	Psychology of Play	
GSND 6330	Player Experience	
GSND 6340	Biometrics for Design	
GSND 6350	Data-Driven Player Modeling	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

34 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Sample Two Years, One Co-op (Optional) Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Co-op (Optional)	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
		9			0
Year 2					
Fall	Hours	Spring	Hours		
GSND 5122	1	General elective	4		
Concentration elective	4	GSND 7990	4		

General elective	4	
	9	8

Total Hours: 34

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Sample Two Years, No Co-op Plan of Study

Year 1

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
GSND 5110	4	Concentration elective	4	Vacation	0
GSND 5111	1	Concentration elective	4		
GSND 5130 or PPUA 5301	4				
	9		8		0

Year 2

Fall	Hours	Spring	Hours
GSND 5122	1	General elective	4
Concentration elective	4	GSND 7990	4
General elective	4		
	9		8

Total Hours: 34

Data Analytics, Graduate Certificate

The interdisciplinary Graduate Certificate in Data Analytics is offered through a collaboration between the College of Computer and Information Sciences and the College of Social Sciences and Humanities. The certificate curriculum emphasizes the skills needed to bridge between emerging technological capacities and traditional policymaking processes. The program is designed to provide students with foundational knowledge in data science—including data management, machine learning, data mining, statistics, and visualizing and communicating data—that can be applied to data-driven decision making in any discipline.

For more information on the certificate, refer to the program's website (<http://www.northeastern.edu/datascience>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4

Website (<http://www.coe.neu.edu/academics/graduate-school-engineering>)

Nadine Aubry, PhD, Dean

Thomas C. Sheahan, ScD, Senior Associate Dean for Academic Affairs

130 Snell Engineering Center
617.373.2711

The Graduate School of Engineering (GSE) offers research and professional degree programs organized around a core curriculum that equips students with a solid foundation for technical and leadership positions in industry organizations, government laboratories, research laboratories, and educational institutions. By involving students in many levels of research, encouraging collaboration across departments, and partnering with outside institutions and organizations globally, Northeastern engineering graduate students have the opportunity to gain a rich and experiential education in their chosen discipline.

Master of Science and doctoral degree programs are offered, as well as numerous graduate certificate programs that can be applied toward master's degree programs for lifelong learning. GSE offers traditional full-time day and part-time evening master's and doctoral degree programs and part-time evening certificate programs. Programs are offered in Boston and at regional campuses. A number of courses and degree programs are also available in a flexible online or hybrid format, which are well suited for distance learners. Innovative programs, such as interdisciplinary degrees, business/entrepreneurship pathways, and the Academic Link (AL) program for students without an undergraduate engineering degree (or who need additional preparatory course work), enable students to personalize their learning experience.

Academic Policies and Procedures

- Learning Outcomes (p. 120)
- Admission Requirements (p. 120)
- Cooperative Education Policies (p. 120)
- Online and Video Streaming Examination Policy (p. 122)
- Course Registration and Withdrawal (p. 122)
- Academic Standards and Degree Requirements (p. 123)
- Administrative Procedures (p. 125)
- Petitions (p. 125)
- Re-enrollment Policy for Full-time Students (p. 126)

Learning Outcomes

Doctor of Philosophy

The PhD programs' student learning outcomes are:

- Ability to use basic engineering concepts flexibly in a variety of contexts
- Ability to formulate a research plan
- Ability to communicate orally a research plan
- Ability to conduct independent research

Master of Science

The MS programs' student learning outcome is:

- Ability to use basic engineering concepts flexibly in a variety of contexts.

Admission Requirements

To be minimally qualified to pursue admission, a candidate must have successfully completed or be in the process of completing an appropriate undergraduate bachelor's degree from a regionally accredited U.S. college or university or its equivalent from a foreign college or university. Any offer of acceptance is contingent upon a candidate's successful completion of an undergraduate bachelor's degree from a regionally accredited U.S. college or university or its equivalent from a foreign college or university.

Application requirements:

- Online application.
- Statement of purpose.
- Professional resumé.
- Transcript(s) from any and all colleges or universities attended evidencing all courses, grades, and credits, as well as any diploma(s) or provisional certificate(s) evidencing that degree(s) have been conferred.
- Two letters of recommendation.
- GRE scores are required of most applicants. For complete information on this requirement, visit the Graduate Admissions website. (<http://www.coe.neu.edu/degrees/graduate-admissions>)
- TOEFL or IELTS scores are required of most applicants whose native language is not English. For complete information on this requirement, visit the Graduate Admissions website (<http://www.coe.neu.edu/degrees/graduate-admissions>).

Cooperative Education Policies

The College of Engineering Graduate Cooperative Education Program (co-op) is one option for experiential learning and is available to selected students enrolled full-time at Northeastern University in a degree-granting program. Students registered only in a graduate certificate program are not eligible.

The goals of cooperative education are to:

- Apply knowledge and skills in new, authentic contexts
- Develop new knowledge and skills
- Integrate and use the deepened knowledge and skills in your academic programs
- Reflect on and articulate how you used your knowledge and skills, how you gained new knowledge and skills, and how "theory and practice" work together

Students who wish to participate in co-op must meet the eligibility requirements and follow the guidelines that follow. Co-op is not guaranteed for any student; students must compete and be selected for

a limited number of co-op opportunities. These guidelines apply to all graduate students in the College of Engineering.

Eligibility Requirements

- Students must successfully complete Career Management for Engineers (ENCP 6000) or Introduction to Cooperative Education (ENCP 6100) or Introduction to Cooperative Education (EECE 6000) (depending on their major). Students MUST meet all co-op eligibility requirements to enroll in Career Management for Engineers (ENCP 6000) or Introduction to Cooperative Education (ENCP 6100). A complete list of requirements is found on the Graduate School of Engineering website (<http://www.coe.neu.edu/co-op-advantage/graduate-co-op>).
- To be eligible for co-op, College of Engineering graduate students must be:
 - Enrolled full-time at Northeastern University
 - Meet the minimum GPA and minimum semester-hour requirements for their program described in the table below, as applicable
 - Meet all English-language requirements described in the table below, as applicable
 - Have no disciplinary or academic probation issues and no incomplete courses (i.e., no I grade in their records)
 - Have at least one term left in their program after completing co-op (i.e., students must return to Northeastern to take courses for at least one term prior to graduating)
 - Have a valid I-20 (for international students)
- Co-op performance standards encourage professional and ethical behaviors throughout the co-op process and clarify procedures required for continued success of our students and the co-op program. The College of Engineering Co-op Performance Standards are communicated to all students in the Career Management for Engineers (ENCP 6000) / Introduction to Cooperative Education (ENCP 6100) / Introduction to Cooperative Education (EECE 6000) course as part of their preparation for the first co-op experience. The standards establish co-op professional expectations of the student throughout the co-op search process and during the co-op term and address co-op related issues that may involve performance. In the event that a situation arises that requires special consideration, the College of Engineering Co-op Standing Committee may be consulted.
- Students who are dismissed from or resign from a co-op job for circumstances under their control will receive a U (unsatisfactory) grade for co-op work experience and be ineligible for other future co-op experiences.
- Students must receive academic and co-op advisor approval prior to accepting a placement.

Code	Title	Hours
Electrical and Computer Engineering		
GPA >		3.2
Minimum TOEFL requirement		90
Minimum IELTS requirement		7

Note: If below TOEFL/IELTS requirement at matriculation, a new TOEFL/IELTS meeting requirement is needed.

Required preparation courses	ENCP 6100 or EECE 6000
Minimum number of semester hours completed	16 SH

Code	Title	Hours
Bioengineering, Chemical Engineering, Civil Engineering, Data Analytics, Engineering and Public Policy, Environmental Engineering, Industrial Engineering, Mechanical Engineering, Operations Research, and Sustainable Building Systems		
GPA >		3.2
Minimum TOEFL requirement		95
Minimum IELTS requirement		7

Note: If below TOEFL/IELTS requirement at matriculation, a new TOEFL/IELTS meeting requirement is needed.

Required preparation course	ENCP 6100
Minimum number of semester hours completed	16 SH

Code	Title	Hours
Computer Systems Engineering, Energy Systems, Engineering Management, Information Systems, and Telecommunication Networks		
GPA		Student must be in good academic standing

Minimum TOEFL requirement	Student must be in good academic standing
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Minimum IELTS requirement	Student must be in good academic standing
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Required preparation course	ENCP 6000
Minimum number of semester hours completed	16 SH

Guidelines

- For the purposes of these guidelines, internships, practicums, clinicals, cooperative education, residencies, or similar programs, are all treated as a co-op and are not considered separate experiences in the Graduate School of Engineering. See below for a special note for international PhD student internships only (NOT part of the co-op program).
- Students may not hold a graduate stipend assistantship at the university during the semesters planned for co-op.
- Students may participate in co-op activities with a single company for a four-, six-, or eight-month period. The total duration of co-op cannot exceed eight months or be shorter than four months. Co-ops are aligned with academic terms (fall, spring, and full summer or summer 1 and summer 2). For purposes of determining the length of a co-op, it is based on the terms participated in—a co-op in any one term is a four-month co-op (full summer, fall, or spring); six-month co-ops are spring and summer 1 or summer 2 and fall; eight-month

co-ops are two consecutive terms (spring and full summer or full summer and fall); fall and spring co-op is not allowed.

4. Students on four-month co-op assignments are allowed to have their co-op extended to a maximum of eight months (aligning with terms as stated above (fall and spring co-op is not allowed), provided they have approval from their academic and co-op advisor.
5. Co-ops are required to be full-time (35+ hours per week) and, thus, students are allowed to take at most one course during the fall and spring semesters while participating in co-op activities; students are required to seek approval from their co-op coordinator prior to registering for a course during a fall or spring co-op term. Students participating in co-op during the full summer are only allowed to take a single course over the entire summer (i.e., a full summer, summer 1, or summer 2, not one in each period); students are required to seek approval from their co-op coordinator prior to registering for a course during a summer co-op term.
6. Students are permitted to participate in one co-op experience as a graduate student. A student who in the process of seeking a cooperative education experience and is disqualified because of violation of co-op performance standards described in guideline number 3 above is ineligible to seek a future cooperative education experience. In other words, the student forfeits the opportunity to participate in co-op.
7. Students who wish are allowed to create their own co-op placement outside of NUcareers but must meet all the requirements and follow all the guidelines.
8. Final decision regarding any exceptions to the above requirements needs to be approved by the co-op faculty of the appropriate program.

Seattle and Silicon Valley Campus MSIS Students Only

Seattle and Silicon Valley multidisciplinary graduate engineering students only are permitted to participate in a second co-op experience. In addition to the collegewide graduate co-op eligibility requirements and guidelines, the supplemental second co-op must additionally meet the following requirements:

1. The student must obtain the second co-op on their own, without use of the NUcareers co-op database.
2. Total co-op length for the two co-op experiences combined cannot exceed eight months.
3. The first and second co-op experiences may not occur in consecutive fall and spring terms.
4. Students must receive academic advisor and faculty co-op coordinator approval prior to initiating a search for a second co-op position and also before accepting a second co-op position.

International PhD Student Internships

An internship at Northeastern is a special case of experiential learning that applies only to international PhD students. Like co-op, it is classified as Curricular Practical Training (CPT) for F-1 visa holders or pre-Academic Training (pre-AT) for J-1 visa holders. An internship must be integral to a student's research or dissertation. As such, the student's research or dissertation would suffer greatly without this experience. Generally, because of the close relationship to the student's research or dissertation, internships are arranged by the student's faculty advisor. Further, it is incumbent upon the faculty advisor to sign and verify that this experience is integral to the student's dissertation or research as part of the CPT approval process, allowing the student to have this experience. Paid or unpaid internships have the same requirements. Internships are never authorized in a student's final semester. CPT internship requests must be approved by the student's

academic advisor, department chair, and the Graduate School of Engineering.

Internships, Co-op, and Pre-OPT

A position that a student finds on their own in a field related to their program of study, to provide funding during the summer, or to supplement their income does not qualify for internship CPT authorization, though the position might qualify as a co-op or Pre-OPT experience—provided the student meets all the qualifications for the relevant authorization. Like co-op, internships are not part of a jobs program, even if they do provide experience that would be beneficial to employment after graduation. The key is that any internship must have a very direct and strong relationship to the student's research or dissertation.

Online and Video Streaming Examination Policy

Exam Administration

Students who are enrolled in online and video-streaming sections may be required to have their exams proctored. If a proctor is required, it is the student's responsibility to find a proctor and then have the proctor approved by the Graduate School of Engineering. Students must make arrangements for an exam proctor following the proctor application guidelines. The Graduate School of Engineering reserves the right to reject any proctor application if the guidelines are not followed.

Video-streaming students living within 30 miles of their home campus (Boston, Charlotte, Silicon Valley, or Seattle) and who are enrolled in video-streamed sections may be strongly encouraged by the faculty to take exams at their home campus if there is a campus designee to provide proctoring services. In cases where a student is unable to travel to campus for exams, a proctor can be used.

For successful proctoring, the following responsibilities are delineated.

Student Responsibilities

Students must make arrangements for a proctor. Students are required to complete and submit a Proctor Application form to the Graduate School of Engineering office by the end of the third week of class.

Proctor Responsibilities

The proctor is responsible for administering exams to the students per the instructor's directions and in accordance with the Academic Honesty and Integrity Policy in order to maintain the security and integrity of the exam process.

Faculty Responsibilities

To administer each exam, the instructor will make arrangements for the exchange of exam materials with the proctor. Once a proctor is approved, the faculty is in charge of coordinating and interacting with the proctor.

Course Registration and Withdrawal

Overview

Students must follow their program of study curriculum as published in this University Graduate Catalog (2012 and beyond), or the Graduate School of Engineering Student Guide and Catalog (prior to 2012), for the year in which they matriculate. Any change in the course work or program requirements must be approved by the student's program advisor and/or the department. Additionally, students must complete any preparatory courses stipulated at the time of admission within the stated time frame.

Registration in classes is mandatory to maintain an active status with the university. Students must be registered in all courses for a given term prior to the university course add deadline. Students should not register for an excessive number of courses or for multiple sections of the same course with the intention of dropping half or more of the courses during the first week of classes.

Students must be registered in their last semester of study. Students finishing their requirements in the summer semester must be registered either in the full summer, summer 1, or summer 2 term.

Any student who is financially withdrawn by Student Accounts prior to the start of any given semester will not be permitted to register for that semester until he or she rectifies the outstanding financial obligation.

Due to last-minute scheduling changes, the Graduate School of Engineering must occasionally substitute faculty or change class schedules after the registration period has begun. Any student registered for the original course will automatically be registered for the updated section should no major schedule conflicts be apparent. Otherwise, the graduate school or the department will contact all affected students for alternatives.

Northeastern University reserves the right to cancel, postpone, combine, or modify any class.

Course Selection

Full-time students (domestic and international) in the Graduate School of Engineering must register for classes on an ongoing basis and carry a minimum of 8 semester hours of course work per semester. Any student who is appointed to a stipended graduate assistantship (SGA) is considered full-time for the term(s) of appointment if enrolled for a minimum of 6 semester hours.

All graduate students who are registered for Dissertation, Dissertation Continuation, Thesis Continuation, PhD Candidacy Preparation, PhD Exam Preparation, or a zero-semester-hour Research course are considered full-time. Registration in these courses is restricted to students who qualify for registration in these courses.

The graduate school does not require part-time students to be enrolled for a certain minimum number of semester hours in any term. However, part-time students who are not enrolled for more than one term (excluding summer terms) should take a leave of absence from the university to maintain active student status to keep their student account active.

The maximum number of semester hours approved for a student in each term varies by the degree program. However, a student can petition his or her program advisor to request permission to register for more than the allowed maximum number of semester hours for a given term. Normally, no more than 9 semester hours (inclusive of transfer credits and advanced standing for MS programs) may be taken outside the College of Engineering.

Students should formulate a program of study in consultation with their assigned program advisor at the beginning of their program, during fall or spring orientation. Students should preselect courses whenever possible and plan to take them when offered, maintaining flexibility with alternate courses in mind. Courses other than the required courses are offered based on demand and are subject to faculty availability. Not all courses are offered every year; however, the graduate school will do everything possible to assure continuity of programs and permit students to make continuous progress toward earning their degrees.

Students who need assistance with course selection, course sequencing, waivers, and/or transfer credits should contact their academic advisor or Graduate Student Services in the Graduate School of Engineering.

MS Thesis and Thesis Continuation

Master's degree students who are completing a thesis must register for a total of 8 semester hours of Thesis. Students who have not completed their thesis but have already registered for the required number of thesis hours, and have no remaining course work to complete the degree, may register for Thesis Continuation in their last semester (including summer term) to maintain full-time status. There is a 1-semester-hour tuition charge for Thesis Continuation. Thesis Continuation may be taken only once.

During graduation clearance, the Graduate School of Engineering will retroactively register students who fail to register correctly for Thesis Continuation. Once these retroactive registrations are posted on a student's record, Student Accounts will send a tuition bill to the student.

Dissertation and Dissertation Continuation

Once program requirements are met for the PhD candidacy, PhD candidates must register for two consecutive semesters (may include the summer term) of Dissertation (XXXX 9990). Candidates must then register for Dissertation Continuation in each subsequent semester (excluding the summer term) until the dissertation is complete and approved by the Graduate School of Engineering. Students completing their dissertation in the summer term must register for Dissertation Continuation in the summer term. There is a 1-semester-hour tuition charge for Dissertation Continuation.

During graduation clearance, the Graduate School of Engineering will retroactively register students who fail to register for the correct sequence of Dissertation and/or Dissertation Continuation. If tuition is owed by the student once these retroactive registrations are posted on a student's record, Student Accounts will send a tuition bill to the student.

Attendance Policy

In each term, continuing students are expected to be on campus by the first day of classes and online students are expected to log-in and stay attentive starting from the first class of each term. Course instructors are not expected to make accommodations for students who arrive after the first day of classes. Students who do not attend their class during the first week of a semester risk being dropped from the course. Students should not expect that they will be added to the classes after the university course add deadline.

Academic Standards and Degree Requirements

Academic Requirements

In order to earn a degree in the graduate program in which a student is enrolled, he or she must complete all program and departmental requirements in a satisfactory manner.

A student must attain a cumulative grade-point average (GPA) of 3.000 or higher with no more than 8 semester hours below the grade of B– in all courses applied toward that degree and exclusive of any prerequisite courses required of students admitted provisionally to their program. A student must also earn a grade of C or higher in all required core courses. Please note that individual programs may have additional requirements.

Prerequisite Courses/Undergraduate Courses

Students are not awarded credit toward graduate degree requirements for prerequisite courses unless expressly stated by the student's academic

department. Students may occasionally be permitted by their advisor to take undergraduate courses. However, undergraduate courses do not count toward a graduate degree and may affect a student's eligibility to receive federal financial aid. Undergraduate courses do not count toward the graduate-level course load requirement for full-time students.

Pass/Fail Grading Policy

The Graduate School of Engineering does not allow College of Engineering (COE) graduate students to elect a pass/fail grading scheme for courses normally letter graded.

Degree Conferral

A degree is awarded at the end of the term (fall, spring, or summer) in which the final requirement for the degree is satisfied.

Academic Probation (Full-Time Students)

STUDENT'S ACADEMIC STANDING

Academic standing at Northeastern University is determined by a student's cumulative GPA. All graduate students are expected to maintain a cumulative GPA of 3.000 or higher each term to remain in good academic standing and to progress toward graduation. Students falling below a cumulative GPA of 3.000 are placed on academic probation for each academic term in which the cumulative GPA is below 3.000. This will be noted on the student's unofficial transcript.

ACADEMIC PROBATION POLICY

Academic probation is a period of time when a student must address and remediate academic deficiencies.

A student placed on academic probation will receive a written notification by the Graduate School of Engineering (hereafter referred to as the graduate school). The student's academic advisor will also receive notification of the student's probationary status. An academic probation action plan to clear the deficiency must be developed by the student and the student's academic advisor. It is the student's responsibility to complete an action plan (with input from the advisor) that documents how the deficiency will be remediated. This action plan must be signed by the academic advisor and the student, and a copy must be submitted to the graduate school as soon as possible and no later than seven business days from the start of the next academic term. If the action plan is not received by this deadline, the graduate school will cancel the student's course registration(s). **Failure to file a complete and meaningful action plan may be cause for dismissal from the program.** The graduate school reserves the right to reject or change the action plan.

DISMISSAL FROM PROGRAM

A student (part-time or full-time) placed on academic probation for a cumulative GPA of less than 3.000 will have one academic term to raise the cumulative GPA greater than or equal to 3.000. Students whose cumulative GPA is below 3.000 for **two consecutive** terms in which they took courses for credit (excluding Career Management for Engineers (ENCP 6000) or Introduction to Cooperative Education (ENCP 6100), if taken) will automatically be dismissed from their degree program at the end of the second term. Students in this situation may submit an academic dismissal appeal plan to the graduate school to request a final one-term extension. In this case, the student may submit an appeal to the associate dean of the graduate school as per the university appeals process.

Students being dismissed from their program will receive a written notification from the Graduate School of Engineering.

APPEALS PROCESS

A student may appeal a dismissal from his or her program of study due to failure to achieve academic standards set forth in this academic

probation policy. To initiate an appeal, the student must send a written request to the associate dean of the graduate school detailing the reasons the student is appealing the dismissal. The written request must be signed by the student, and the appeal must be received by the Graduate School of Engineering within 30 business days from the day the student received written notification of dismissal. The graduate school will respond to the appeal within 10 business days of the date of receipt.

Academic Probation (Part-Time Students)

Students in official part-time status with the University are considered on academic probation if the cumulative GPA is below 3.000 after completion of 8 semester hours. Part-time students must raise the cumulative GPA to 3.000 or higher after completion of 8 additional semester hours to regain good academic standing status.

If the student's cumulative GPA remains below 3.000 after completion of 16 semester hours, the student will be dismissed from the degree program. The student may appeal to attempt an additional final 8 semester hours to raise the cumulative GPA to 3.000 or higher. The appeal is reviewed by the academic probation appeals committee for the student's degree program. If denied, the academic dismissal stands.

Course Repeat/Course Substitution Policy for Students on Academic Probation

The Graduate School of Engineering allows students to repeat (or substitute) a total of up to 8 semester hours of course work beyond stated minimum degree requirements in order to attain the required cumulative 3.000 GPA for good academic standing.

COURSE REPEAT

When the appropriate course is available, courses may be repeated once in order to earn a better grade. In all cases, the most recent grade earned in a course is the one used in calculating the overall GPA; however, previous grades remain on the transcript with a note that the grade is "excluded." This means that the course is excluded from the GPA and earned credit calculation. Students must obtain approval from their academic advisor and the Graduate School of Engineering prior to repeating a course. Students are required to pay normal tuition charges for all repeated course work.

Within the above limitations for extra or repeated courses, a student must repeat any required core course in which he or she earns a grade below C. Individual programs may have additional requirements.

COURSE SUBSTITUTION

In cases where repeating a course is not possible, a student may petition to substitute one course for another they have already taken, as long as the course content is significantly similar and is not a core required course.

The student's academic advisor, graduate school, and in some cases the graduate director of the student's department must approve of the substitution. If approved, the grade in the new course taken will be included in the GPA calculation, and the first course taken will remain on the transcript with a note that the grade is "excluded" from the GPA and earned credit calculation. Students are required to pay normal tuition charges for all substituted course work.

Course Repeat Policy for Students in Good Academic Standing

Students who are in good academic standing may repeat up to 8 semester hours of course work in order to earn a better grade. A course may only be repeated once.

In all cases, the most recent grade earned in a course is the one used in calculating the overall GPA; however, previous grades remain on the transcript with a note that the grade is “excluded.” This means that the course is excluded from the GPA and earned credit calculation. Students must obtain approval from their academic advisor and the Graduate School of Engineering prior to repeating a course. Students are required to pay normal tuition charges for all repeated course work.

Course substitution is not an option for students in good academic standing.

Administrative Procedures

Husky Email

University communications will always be sent to the student’s Husky email address. Students are responsible for checking their Husky email account email regularly.

Petitions

Overview

Petition procedures described below are required in all cases so that the Graduate School of Engineering may maintain a complete and accurate record for all students. All petitions, unless otherwise noted, must be formally made on a Graduate School of Engineering petition form and approved by a student’s academic advisor, department graduate director (if applicable), and by the Graduate School of Engineering. Other approvals may be required as stipulated by the graduate school upon petition review. Students should refer to the Graduate School of Engineering (<http://www.coe.neu.edu/academics/graduate-school-engineering>) website for additional instructions.

Elective Outside of the Approved Program Curriculum

Courses approved for each degree program are found in the Northeastern University *Graduate Catalog*. Students must follow the curriculum of their program of study published in the year in which they matriculate. If a student wishes to take a course that is not on the list of approved courses for his or her program, the student must request permission from the academic advisor to take the course **prior to** registering for that course. Failure to obtain permission to take a course that is not part of the approved curriculum, as listed in the catalog, may result in that course not counting toward the student’s graduate degree. The petition must be submitted to the Graduate School of Engineering for review. Final decision on all the requests made by a petition form rests with the Graduate School of Engineering.

Note: Students enrolled in a PhD program are not subject to this requirement. Course selection is considered a matter among the student, academic advisor, and department.

Course Waiver

A student may petition to waive any core course (also known as a required course) when he or she has completed equivalent or similar course work elsewhere. The student must submit a completed petition form along with a course description and an official transcript from the institution where he or she completed the course.

Note: Course waivers **do not** decrease the number of required semester hours in any program of study. Submission of a waiver petition does not guarantee a waiver. All waiver petitions are subject to review by the academic advisor, department graduate director (in applicable cases),

and the Graduate School of Engineering. The waived course must be replaced by an advisor-approved course.

Extension of Time Limit to Complete Program

All Northeastern University graduate course credits earned in a program of study, or accepted for transfer credit, are valid for a maximum of seven years. To request an extension, students may submit a petition to their academic advisor, including the reason(s) for the request, an intended course of action, and length of time needed to complete degree requirements.

In the case of the Doctor of Philosophy degree, after the establishment of degree candidacy, a maximum of five years is allowed for the completion of degree requirements. To request an extension, students may submit a petition to their academic advisor, including the reason(s) for the request, an intended course of action, and length of time needed to complete degree requirements.

Change in Status (Full-Time, Part-Time)

Students may petition to change their student status from full-time to part-time study within the same program by filing a petition form, signed by their program advisor, graduate program director (in some departments), and submitted to the Graduate School of Engineering. In all cases, students who hold an assistantship, or whose department requires full-time students to complete a project or thesis, must have departmental approval to change status.

Students who wish to change status from part-time to full-time study within the same program must have completed a minimum of 8 semester hours of course work with a minimum 3.000 grade-point average (GPA). Students in this case must submit a petition to change status to their advisor or departmental graduate officer for approval.

Students should discuss the financial implications of changing their student status with the Office of Student Financial Services.

International students are subject to the rules governing their immigration status and should consult with an advisor in the Office of Global Services before filing a status change petition.

Change in Degree Concentration

A student who wishes to change degree concentration within the same program must submit a completed Change of Degree Program/Concentration form to the program advisor of the new concentration—and, in some cases, to the chair of the graduate committee of their department—for approval. The form must then be forwarded to the Graduate School of Engineering for final review and processing. Students should refer to the Graduate School of Engineering (<http://www.coe.neu.edu/academics/graduate-school-engineering>) website for additional instructions.

Change in Degree Program

A student who wishes to change his or her degree program must apply for admission to the desired program. This means a new online admission application must be submitted. The application fee is waived. If admitted, the student must submit a completed Change of Degree Program form to the advisor of the new program. The form must then be forwarded to the Graduate School of Engineering for final review and processing. Students should refer to the Graduate School of Engineering (<http://www.coe.neu.edu/academics/graduate-school-engineering>) website for additional instructions.

Change in Degree Level

A student who wishes to change the degree level from MS to PhD must apply for admission to the PhD program. This means a new online admission application must be submitted. The application fee is waived. If admitted, the student must submit a completed Graduate School of Engineering Change of Degree Level form to the director of the PhD program. The form must then be forwarded to the Graduate School of Engineering for final review and processing. Students should refer to the Graduate School of Engineering (<http://www.coe.neu.edu/academics/graduate-school-engineering>) website for additional instructions.

A student who wishes to change the degree level from PhD to MS within the same degree program need not submit a new online application but must submit a Change of Degree Level form to the academic advisor—and, in some departments, to the chair of the graduate committee—for approval. If approved, the Change of Degree Level form must then be submitted to the Graduate School of Engineering for final review and processing. Students should refer to the Graduate School of Engineering (<http://www.coe.neu.edu/academics/graduate-school-engineering>) website for additional instructions.

Reenrollment Policy for Full-time Students

Students who enroll and complete at least one graduate engineering course can apply to their academic department to take an official leave of absence from the time they complete said course(s) and be automatically readmitted without department review. Automatic readmission applies only to the original program and concentration (if applicable), and only for students who took an official approved leave of absence. Catalog year of entry does not change and students must complete the curriculum requirements outlined in the *University Graduate Catalog* for their original academic year of admission.

If a student without official leave of absence approval does not enroll in classes for two consecutive fall/spring semesters, they will be declared inactive. To return from inactive status, a student must submit an updated application to refresh their student record, and this application will be approved provided the student was in good standing at the time their absence started.

If a student without official leave of absence approval does not enroll in classes for three consecutive fall/spring semesters, or does not indicate their intent in writing to the Graduate School of Engineering by the end of the third consecutive semester, they will be withdrawn from the program. In the case of withdrawal, a student will be required to submit a new admission application for graduate studies without guarantee of readmission. If the student is admitted after being withdrawn, they will be admitted into the current catalog year and must meet the curriculum requirements in the current *University Graduate Catalog*.

In cases where the student has seven or more years of nonenrollment, the student's previous course work completed at the university will first undergo departmental review for technical content and relevance to current degree, followed by institutional review mapping courses completed to the current degree program requirements. The institutional review will determine how many credits, if any, completed more than seven years prior will be applied to the current degree.

Bioengineering

Website (<http://www.bioe.neu.edu>)

Lee Makowski, PhD

Professor and Chair

206 Interdisciplinary Science and Engineering Complex
617.373.7805
l.makowski@northeastern.edu

Jeffrey Ruberti, PhD
Professor and Graduate Director

206 Interdisciplinary Science and Engineering Complex
617-373-3984
j.ruberti@northeastern.edu

Shiaoming Shi, PhD
Assistant Teaching Professor and Master of Science Advisor

563 Holmes Hall
617-373-8743
s.shi@northeastern.edu

The Department of Bioengineering is driven by the conviction that the interface of engineering and medicine will be one of the great intellectual adventures of the 21st century and strives to create an atmosphere of innovation and creativity that fosters excellence in instruction and research and provides a foundation for programs that drive forward the cutting edge of knowledge while establishing translational collaborations with clinical and industrial researchers.

Bioengineering is a relatively new field built on the recognition that engineering of biological systems or systems that interface with living systems requires a multidisciplinary approach that takes into account the mechanical, electrical, chemical, and materials properties of the biological system. Students with backgrounds from biochemistry to computer science and many fields in between are attracted to bioengineering as a field with the potential to make a great impact on human health. The MS and PhD programs are designed to integrate students with very different backgrounds and provide them with the course work and research experience that will take advantage of their unique backgrounds and, where appropriate, fill in gaps in their backgrounds to help them grow into a more broadly informed student.

Recognizing the breadth of disciplines that contribute to bioengineering projects, the MS program allows students to choose one of four concentrations (bioimaging and signal processing, cell and tissue engineering, biomechanics, or biomedical devices) to develop deep expertise in an area of particular interest and encourages individual research through a one-semester master's project or two-semester master's thesis.

The PhD program is organized into eight tracks, spanning the breadth of bioengineering research: bioimaging and signal processing; biomechanics and mechanobiology; bioMEMs/bioNANO; biochemical and bioenvironmental engineering; motor control; biocomputing; cell and tissue engineering; general bioengineering studies. Course work during the first year is designed to strengthen student backgrounds in those areas most relevant to the interests of each student.

Mission of the Department

The mission of the Department of Bioengineering is the education of students in the fundamental principles and practice of bioengineering and, through basic and applied research, the creation of new knowledge at the interface of engineering and medicine to support development of new technologies for improvement of human health and healthcare.

Overview of Programs Offered

The Department of Bioengineering offers a Master of Science (MS) and a Doctor of Philosophy (PhD) in Bioengineering. The MS and PhD degree programs are only offered as full-time programs.

Candidates pursuing an MS or PhD are able to select thesis topics from a diverse range of faculty research. New graduate students may learn about ongoing research topics from individual faculty members, faculty websites, and bioengineering seminars.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the MS degree.

Programs

Doctor of Philosophy (PhD)

- Bioengineering (p. 127)
- Bioengineering—Advanced Entry (p. 133)

Master of Science in Bioengineering (MSBioE)

- Bioengineering (p. 135)

Bioengineering, PhD

Our interdisciplinary Doctor of Philosophy (PhD) program in bioengineering draws on faculty across the university and reflects the significant strengths of bioengineering research in multiple areas. Students accepted to the bioengineering program will undertake a rigorous core curriculum in basic bioengineering science followed by an immersion track curriculum. There are currently eight tracks from which to choose:

- Track 1: Biomedical Imaging and Signal Processing
- Track 2: Biomechanics and Mechanobiology
- Track 3: BioMEMs/BioNANO
- Track 4: Biochemical and Bioenvironmental Engineering
- Track 5: Motor Control
- Track 6: Biocomputing
- Track 7: Cell and Tissue Engineering
- Track 8: General Bioengineering Studies

Biology can inspire engineering. Increasingly, discoveries in the life sciences reveal processes, complexity, and control without analogy in the limited world of traditional engineering. Current methods of producing nanoscale control over molecules cannot reproduce the organization found in even the simplest organisms. Energy capture, robust control, remediation, and self-assembly are all employed with efficiency unparalleled by anything in today's laboratories. At the same time, traditional engineering disciplines struggle to find new and complex challenges. The last 50 years of basic life science research have gradually peeled the layers of complexity from biological processes, unmasking the fundamental underpinnings on which biological systems are constructed. Bioinspired engineering has the potential to transform the technological landscape of the 21st century. Astonishingly, it represents merely one of the myriad opportunities presented at the interface of biology and engineering.

The field of bioengineering is broad and includes all research at the interface of engineering and biology—this includes bioprocesses, environmental microbiology, biomaterials and tissue engineering, bioelectricity, biomechanics, biomedical and biological imaging, nanotechnology in medicine and the environment, and engineering design for human interfacing. At Northeastern, bioengineering PhD students have an opportunity to be trained to appreciate advances in bioengineering across a wide range of disciplines while they perform highly focused and cutting-edge bioengineering research with one of our many core or affiliated faculty members.

DEGREE REQUIREMENTS

Completion of the PhD degree requires students to successfully complete the following requirements:

- **Curriculum:** The curriculum comprises a strong fundamental, broad core of courses that is then coupled with one of a series of available tracks for depth in a particular field of study. The detailed course requirements are outlined below.
- **Qualifying exam (written and oral):** To qualify to continue in the PhD program, students must pass the bioengineering comprehensive qualifying examination, which comprises the synthesis of knowledge derived from the core curriculum and current literature presented in the form of an R21 NIH-style proposal. Successful oral defense of the proposal is required to pass the exam as well as satisfactory research progress and satisfactory academic standing. Details of the formal qualification exam procedure and timing are available in the bioengineering office and may be requested electronically from the graduate director. The qualifying examinations (written and oral) must be successfully completed within three years of entry.
- **Qualifying examination committee:** The qualifying examination committee is composed of a minimum of three members, two of whom must be selected from the list of bioengineering-affiliated faculty. In addition, one of the two affiliated faculty must have a primary appointment in the College of Engineering. The student's primary advisor may not sit on the qualifying exam committee.
- **Dissertation committee:** The dissertation committee is composed of a minimum of three members, two of whom must be selected from the list of bioengineering-affiliated faculty. In addition, one of the two affiliated faculty must have a primary appointment in the College of Engineering. The student's primary advisor should be a member of and chair the dissertation committee.
- **Area exam (dissertation prospectus/proposal):** PhD students must submit a "dissertation proposal" to their dissertation committee in the form of an R-21 NIH-style research plan and successfully defend the research plan in the form of an open presentation to their dissertation committee. The area exam should be completed as soon as is practical after successful completion of course work and qualifying exams.
- **Dissertation:** PhD candidates must satisfactorily complete and defend a dissertation describing original research in bioengineering in an open presentation to their dissertation committee.
- **Dissertation course requirements:** After achieving PhD candidacy, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (BIOE 9990). Upon completion of this sequence, the student must then register for Dissertation Continuation (BIOE 9996) in every semester (in each fall and spring term and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (BIOE 9996) until they fulfill the two-semester sequence of Dissertation (BIOE 9990).

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Exam Preparation—Doctoral (BIOE 8960), can be taken if needed to fulfill the full-time course registration requirement. Exam Preparation—Doctoral (BIOE 8960) is an individual instruction course, billed at one semester hour, and graded S or U. Exam Preparation—Doctoral (BIOE 8960) does not have any course content, and students must register in a section for which their research advisor is listed as the “instructor.”

For students possessing a baccalaureate in a suitable quantitative or technical field, the required course distribution is shown in the table below.

Requirements	Credits
Required core courses	24 SH
Required and elective track courses	24 SH
Advanced seminar (register and complete four semesters)	0 SH
Dissertation	0 SH
Minimum semester hours required	48 SH

The core emphasizes the breadth of topics that our graduates must appreciate as internationally competitive bioengineers. It utilizes existing courses within the College of Engineering as well as introducing new/external courses that are necessary and will be developed.

TRACK 1: BIOMEDICAL IMAGING AND SIGNAL PROCESSING

The biomedical imaging and signal processing track reflects Northeastern University’s outstanding research profile in various aspects of biological and biomedical imaging and image processing and signal processing. This is evidenced by the Gordon Center for Subsurface Sensing and Imaging Systems, the Center for Communications and Digital Signal Processing Research, and the strong externally funded active research groups and faculty whose interests lie at the intersection of imaging, signal processing technologies, and biological and medical applications.

The courses listed under program requirements concentrate largely on general mathematical methods for signal and image processing and image formation and on image acquisition modalities and applications. Research in this area takes place at the intersection of these technical streams, and students completing the track will have a sufficiently strong background in the component areas to be able to carry out high-quality research efforts. Bioengineering PhD candidates may complete this track by taking at least two of the restricted electives and sufficient unrestricted electives to meet course requirements as specified by their degree program in addition to their core bioengineering curriculum.

TRACK 2: BIOMECHANICS AND MECHANOBIOLOGY

Biomechanics and mechanobiology are linked by the biological response to applied forces and strains. To understand the overall effect of load on biological systems, it is important to consider not only the deformation and shear rates that result from force application but also the short- and long-term biological responses. The biomechanics and mechanobiology track reflects this understanding and leverages the strong faculty research at Northeastern, which is attempting to tie biomechanics to biological responses at multiple scales.

The biomechanics track is designed to capitalize on the substantial expertise in the mechanical and industrial engineering department, which has a strong fundamental research program in biomechanics. Faculty in the department perform investigations that comprise theoretical, computational, and experimental investigations. Students who select

this track must take all of the restricted electives in addition to the bioengineering core curriculum and sufficient unrestricted electives to meet course requirements as specified by their degree program.

TRACK 3: BIOMEMS/BIONANO

The bioMEMs/bioNANO track reflects Northeastern University’s strength as indicated by the NSF Center for High Rate Nanomanufacturing, the NSF/NCI Nanomedicine IGERT training grant, and the strong pharmaceutical sciences department. In addition, Northeastern also has a research presence in MEMs that, when combined with the bioengineering curriculum, presents significant interdisciplinary opportunities for students in the program. Students may choose to complete this track by taking three of the restricted electives in addition to their core bioengineering curriculum and sufficient unrestricted electives to meet course requirements of their degree program.

TRACK 4: BIOCHEMICAL AND BIOENVIRONMENTAL ENGINEERING

The track reflects strengths in biochemical engineering and bioenvironmental engineering by active research programs focused in pharmaceutical bioprocessing, biomaterials, tissue engineering, drug delivery, environmental microbiology, biotreatment/bioremediation, and environmental modeling. Students wishing to pursue this track should take two of the restricted electives listed below in addition to the bioengineering core curriculum and sufficient unrestricted electives to meet the course requirements of their degree program.

TRACK 5: MOTOR CONTROL

The motor control track is designed to capitalize on the collective expertise of cross-disciplinary collaborations between existing Northeastern faculty whose research lies at the intersection of sensorimotor control systems, neuroscience, and dynamical systems. Insights into learning and coordination of functional motor behavior provide the basis for a better understanding of neurological diseases of motor function such as stroke, Parkinson’s disease, and cerebral palsy. Insights will be the foundation for designing better therapy and rehabilitation.

Students who select this track must take four out of five restricted electives in addition to the bioengineering core curriculum and unrestricted elective courses to meet requirements of the track program.

TRACK 6: BIOCOMPUTING

The biocomputing track draws on strengths in computer engineering and computation applied to bioengineering applications. Bioengineering MS or PhD candidates may complete this track by taking both of the restricted electives and sufficient unrestricted electives to meet course requirements as specified by their degree program.

TRACK 7: CELL AND TISSUE ENGINEERING

Cell and tissue engineering is a major strength at Northeastern University with several research labs focused on understanding and engineering living cells and tissues. These labs are elucidating the quantitative principles that govern cell fate decisions and are developing design strategies to promote the assembly and patterning of multicellular systems into viable, functional tissues. Cells are remarkable physicochemical systems that sense, respond, and actively reshape their rich microenvironment. Parsing the dialogue between the microenvironment and cells and elucidating design strategies to engineer the dynamic cellular milieu has far-reaching implications for biomedicine, including applications such as tissue engineering and the development of novel therapeutic strategies.

This pioneering, multidisciplinary research is enabled by strengths at Northeastern in key foundational areas, such as biomolecular engineering, computational modeling, developmental biology, imaging,

materials science, micro- and nanofluidics, mechanobiology, molecular cell biology, and systems biology.

Cell and tissue engineering is widely recognized as a core subfield of bioengineering. A formal track in this area offers our students a program of study that capitalizes on a major strength at Northeastern.

TRACK 8: GENERAL BIOENGINEERING STUDIES

The general bioengineering studies track provides students with the flexibility to create a custom course plan depending on their individual interests, under the strong advisement of the bioengineering graduate director.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review

Qualifying examination (within three years of entry)

Dissertation committee

Area examination (dissertation prospectus/proposal)

Dissertation defense

Core Requirements

Code	Title	Hours
Seminar		
BIOE 7390	Seminar (Register and complete four semesters)	0

Required Core

BIOE 6100	Medical Physiology	4
BIOE 7000	Principles of Bioengineering	4

Additional Course Work

Complete 12 semester hours from the following:		12
BIOE 5430	Principles and Applications of Tissue Engineering	
BIOE 5650	Multiscale Biomechanics	
BIOE 5820	Biomaterials	
CHME 5630	Biochemical Engineering	
EECE 5664	Biomedical Signal Processing	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
BIOE 9990	Dissertation	

Track Options

Complete one of the following tracks:

- Biomedical Imaging and Signal Processing Track (p.)
- Biomechanics and Mechanobiology Track (p. 129)
- BioMEMs/BioNANO Track (p. 130)
- Biochemical and Bioenvironmental Engineering Track (p. 130)
- Motor Control Track (p.)
- Biocomputing Track (p. 131)
- Cell and Tissue Engineering Track (p.)

- General Bioengineering Studies Track (p.)

BIOMEDICAL IMAGING AND SIGNAL PROCESSING TRACK

Code	Title	Hours
Required Course work		
EECE 7200	Linear Systems Analysis	4
EECE 7203	Complex Variable Theory and Differential Equations	4
EECE 7204	Applied Probability and Stochastic Processes	4

Mathematical Methods

Complete 4 semester hours from the following:

CHME 7320	Chemical Engineering Mathematics	
EECE 7200	Linear Systems Analysis	
EECE 7203	Complex Variable Theory and Differential Equations	
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	

Electives

Complete 16 semester hours from the following:		16
BIOE 5235	Biomedical Imaging	
BIOE 5320	Advanced Biomedical Measurements and Instrumentation	
BIOE 7100	Special Topics in Biomedical Imaging and Signal Processing	
BIOL 5581	Biological Imaging	
BIOL 5587	Comparative Neurobiology	
CHEM 5612	Principles of Mass Spectrometry	
CHEM 5613	Optical Methods of Analysis	
EECE 5648	Biomedical Optics	
EECE 7202	Electromagnetic Theory 1	
EECE 7271	Computational Methods in Electromagnetics	
EECE 7293	Modern Imaging	
EECE 7310	Modern Signal Processing	
EECE 7311	Two Dimensional Signal and Image Processing	
EECE 7312	Statistical and Adaptive Signal Processing	
EECE 7323	Numerical Optimization Methods	
EECE 7337	Information Theory	
PHYS 7741	Biological Physics 2	
PSYC 5120	Proseminar in Sensation	
PSYC 5130	Proseminar in Perception	
PSYC 7300	Advanced Quantitative Analysis	
PT 5138 and PT 5139	Neuroscience and Lab for PT 5138	
SLPA 5111	Anatomy and Physiology of the Auditory System	
SLPA 6301	Speech Science	

BIOMECHANICS AND MECHANOBIOLOGY TRACK

Code	Title	Hours
Required Course work		
BIOE 5630	Physiological Fluid Mechanics	4
ME 5665	Musculoskeletal Biomechanics	4

ME 5667	Solid Mechanics of Cells and Tissues	4
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Mathematical Methods

Complete 4 semester hours from the following:	4
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CHME 7320	Chemical Engineering Mathematics
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EECE 7200	Linear Systems Analysis
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EECE 7203	Complex Variable Theory and Differential Equations
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ME 7205	Advanced Mathematical Methods for Mechanical Engineers
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Electives

Complete 12 semester hours from the following:	12
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BIOE 5380	Advanced Biomolecular Dynamics and Control
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BIOE 5410	Molecular Bioengineering
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BIOE 5630	Physiological Fluid Mechanics
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BIOE 7300	Special Topics in Biomechanics
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BIOL 5601	Multidisciplinary Approaches in Motor Control
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ME 5650	Advanced Mechanics of Materials
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ME 5655	Dynamics and Mechanical Vibration
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ME 5657	Finite Element Method
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ME 5659	Control Systems Engineering
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ME 5667	Solid Mechanics of Cells and Tissues
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ME 7210	Elasticity and Plasticity
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ME 7238	Advanced Finite Element Method
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ME 7245	Fracture Mechanics and Failure Analysis
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ME 7255	Continuum Mechanics
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ME 7275	Essentials of Fluid Dynamics
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ME 7280	Statistical Thermodynamics
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PT 5133 and PT 5134	Kinesiology and Lab for PT 5133
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PT 6215 and PT 6216	Assistive Technology and Lab for PT 6215
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BIOMEMS/BIONANO TRACK

Code	Title	Hours
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Required Course Work

EECE 5606	Micro- and Nanofabrication	4
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ME 6260	Introduction to Microelectromechanical Systems (MEMS)	4
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PHYS 5260	Introduction to Nanoscience and Nanotechnology	4
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Mathematical Methods

Complete 4 semester hours from the following:	4
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CHME 7320	Chemical Engineering Mathematics
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EECE 7200	Linear Systems Analysis
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EECE 7203	Complex Variable Theory and Differential Equations
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ME 7205	Advanced Mathematical Methods for Mechanical Engineers
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Electives

Complete 12 semester hours from the following:	12
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CHEM 5613	Optical Methods of Analysis
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CHEM 5638	Molecular Modeling
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CHEM 7247	Advances in Nanomaterials
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CHME 5699	Special Topics in Chemical Engineering
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EECE 5606	Micro- and Nanofabrication
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NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
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PHSC 5100	Concepts in Pharmaceutical Science
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PHSC 6210	Drug Design, Evaluation, and Development
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PHYS 7731	Biological Physics 1
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PMST 6250	Advanced Physical Pharmacy
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PMST 6252	Pharmacokinetics and Drug Metabolism
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PMST 6254	Advanced Drug Delivery System
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BIOCHEMICAL AND BIOENVIRONMENTAL TRACK

Code	Title	Hours
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Required Course Work

Complete 8 semester hours from the following:	8
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BIOL 6300	Biochemistry
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CHME 5630	Biochemical Engineering
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CHME 7340	Chemical Engineering Kinetics
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CHME 7350	Transport Phenomena
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CIVE 7251	Environmental Biological Processes
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Mathematical Methods

Complete 4 semester hours from the following:	4
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CHME 7320	Chemical Engineering Mathematics
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EECE 7200	Linear Systems Analysis
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EECE 7203	Complex Variable Theory and Differential Equations
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ME 7205	Advanced Mathematical Methods for Mechanical Engineers
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Electives

Complete 16 semester hours from the following:	16
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BIOL 5581	Biological Imaging
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BIOL 6301	Molecular Cell Biology
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CHEM 5612	Principles of Mass Spectrometry
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CHEM 5613	Optical Methods of Analysis
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CHEM 5620	Protein Chemistry
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CHEM 5621	Principles of Chemical Biology for Chemists
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CHEM 5660	Analytical Biochemistry
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CHEM 7317	Analytical Biotechnology
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PHSC 5100	Concepts in Pharmaceutical Science
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PHSC 6218	Biomedical Chemical Analysis
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PHSC 6290	Biophysical Methods in Drug Discovery
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PHYS 7731	Biological Physics 1
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PMST 6252	Pharmacokinetics and Drug Metabolism
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PMST 6254	Advanced Drug Delivery System
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MOTOR CONTROL TRACK

Code	Title	Hours
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Required Course Work

BIOL 5601	Multidisciplinary Approaches in Motor Control	4
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ME 5659	Control Systems Engineering	4
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ME 5665	Musculoskeletal Biomechanics	4
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Mathematical Methods

Complete 4 semester hours from the following:	4
CHME 7320	Chemical Engineering Mathematics
EECE 7200	Linear Systems Analysis
EECE 7203	Complex Variable Theory and Differential Equations
ME 7205	Advanced Mathematical Methods for Mechanical Engineers

Electives

Complete 12 semester hours from the following:	12
BIOL 5587	Comparative Neurobiology
CS 5335	Robotic Science and Systems
EECE 7200	Linear Systems Analysis
EECE 7204	Applied Probability and Stochastic Processes
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7310	Modern Signal Processing
IE 7280	Statistical Methods in Engineering
IE 7315	Human Factors Engineering
ME 5655	Dynamics and Mechanical Vibration
ME 6200	Mathematical Methods for Mechanical Engineers 1
ME 6201	Mathematical Methods for Mechanical Engineers 2
PHYS 7301	Classical Mechanics/Math Methods
PHYS 7321	Computational Physics
PHYS 7741	Biological Physics 2
PSYC 5180	Quantitative Methods 1
PSYC 5181	Quantitative Methods 2
PT 5138 and PT 5139	Neuroscience and Lab for PT 5138
PT 5150 and PT 5151	Motor Control, Development, and Learning and Lab for PT 5150

BIOCOMPUTING TRACK

Code	Title	Hours
Required Course Work		
EECE 7205	Fundamentals of Computer Engineering	4
EECE 7360	Combinatorial Optimization	4
Mathematical Methods		
Complete 4 semester hours from the following:	4	
CHME 7320	Chemical Engineering Mathematics	
EECE 7200	Linear Systems Analysis	
EECE 7203	Complex Variable Theory and Differential Equations	
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	
Electives		
Complete 16 semester hours from the following:	16	
BIOL 5581	Biological Imaging	
BIOL 5587	Comparative Neurobiology	
CS 5100	Foundations of Artificial Intelligence	
CS 5200	Database Management Systems	

CS 5310	Computer Graphics
CS 5330	Pattern Recognition and Computer Vision
CS 5400	Principles of Programming Language
CS 5600	Computer Systems
CS 5800	Algorithms
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6410	Compilers
EECE 7200	Linear Systems Analysis
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7204	Applied Probability and Stochastic Processes
EECE 7352	Computer Architecture
EECE 7353	VLSI Design
EECE 7364	Mobile and Wireless Networking
EECE 7368	High-Level Design of Hardware-Software Systems
OR 6205	Deterministic Operations Research
OR 7230	Probabilistic Operation Research

CELL AND TISSUE TRACK

Code	Title	Hours
Required Course work		
BIOE 5420	Cellular Engineering	4
BIOE 5430	Principles and Applications of Tissue Engineering	4
BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	4

Mathematical Methods

Complete 4 semester hours from the following:	4
CHME 7320	Chemical Engineering Mathematics
EECE 7200	Linear Systems Analysis
EECE 7203	Complex Variable Theory and Differential Equations
ME 7205	Advanced Mathematical Methods for Mechanical Engineers

Electives

Complete 12 semester hours from the following:	12
BIOE 5380	Advanced Biomolecular Dynamics and Control
BIOE 5410	Molecular Bioengineering
BIOE 5630	Physiological Fluid Mechanics
BIOE 7200	Special Topics in Cell and Tissue Engineering
BIOL 5307	Biological Electron Microscopy
BIOL 5543	Stem Cells and Regeneration
BIOL 5581	Biological Imaging
CHME 5699	Special Topics in Chemical Engineering
CHME 7340	Chemical Engineering Kinetics
CHME 7350	Transport Phenomena
EECE 5648	Biomedical Optics
ME 5667	Solid Mechanics of Cells and Tissues

NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
PHYS 7741	Biological Physics 2

GENERAL BIOENGINEERING STUDIES TRACK

Code	Title	Hours
Mathematical Methods		
Complete one of the following:		4
CHME 7320	Chemical Engineering Mathematics	
EECE 7200	Linear Systems Analysis	
EECE 7203	Complex Variable Theory and Differential Equations	
Electives		
Complete 24 semester hours from the following:		24
BIOE 5250	Design, Manufacture, and Evaluation of Medical Devices	
BIOE 5380	Advanced Biomolecular Dynamics and Control	
BIOE 5420	Cellular Engineering	
BIOE 5430	Principles and Applications of Tissue Engineering	
BIOE 5630	Physiological Fluid Mechanics	
BIOE 5650	Multiscale Biomechanics	
BIOE 7100	Special Topics in Biomedical Imaging and Signal Processing	
BIOE 7300	Special Topics in Biomechanics	
BIOL 5307	Biological Electron Microscopy	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5581	Biological Imaging	
BIOL 5587	Comparative Neurobiology	
BIOL 5601	Multidisciplinary Approaches in Motor Control	
BIOL 6300	Biochemistry	
BIOL 6301	Molecular Cell Biology	
BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	
BINF 6200	Bioinformatics Programming	
BINF 6308	Bioinformatics Computational Methods 1	
BINF 6309	Bioinformatics Computational Methods 2	
CAEP 6202	Research, Evaluation, and Data Analysis	
CHEM 5612	Principles of Mass Spectrometry	
CHEM 5613	Optical Methods of Analysis	
CHEM 5620	Protein Chemistry	
CHEM 5621	Principles of Chemical Biology for Chemists	
CHEM 5638	Molecular Modeling	
CHEM 5660	Analytical Biochemistry	
CHEM 7247	Advances in Nanomaterials	
CHEM 7317	Analytical Biotechnology	
CHME 5630	Biochemical Engineering	
CHME 5699	Special Topics in Chemical Engineering	
CHME 7260	Special Topics in Chemical Engineering	
CHME 7330	Chemical Engineering Thermodynamics	
CHME 7340	Chemical Engineering Kinetics	

CHME 7350	Transport Phenomena
CIVE 7251	Environmental Biological Processes
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5310	Computer Graphics
CS 5330	Pattern Recognition and Computer Vision
CS 5335	Robotic Science and Systems
CS 5600	Computer Systems
CS 5800	Algorithms
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6410	Compilers
EECE 5606	Micro- and Nanofabrication
EECE 5648	Biomedical Optics
EECE 7200	Linear Systems Analysis
EECE 7202	Electromagnetic Theory 1
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7204	Applied Probability and Stochastic Processes
EECE 7205	Fundamentals of Computer Engineering
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7271	Computational Methods in Electromagnetics
EECE 7293	Modern Imaging
EECE 7310	Modern Signal Processing
EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7337	Information Theory
EECE 7352	Computer Architecture
EECE 7353	VLSI Design
EECE 7360	Combinatorial Optimization
EECE 7364	Mobile and Wireless Networking
EECE 7368	High-Level Design of Hardware- Software Systems
IE 7280	Statistical Methods in Engineering
IE 7315	Human Factors Engineering
ME 5650	Advanced Mechanics of Materials
ME 5655	Dynamics and Mechanical Vibration
ME 5657	Finite Element Method
ME 5659	Control Systems Engineering
ME 5665	Musculoskeletal Biomechanics
ME 5667	Solid Mechanics of Cells and Tissues
ME 6200	Mathematical Methods for Mechanical Engineers 1
ME 6201	Mathematical Methods for Mechanical Engineers 2

ME 6260	Introduction to Microelectromechanical Systems (MEMS)
ME 7210	Elasticity and Plasticity
ME 7238	Advanced Finite Element Method
ME 7245	Fracture Mechanics and Failure Analysis
ME 7255	Continuum Mechanics
ME 7275	Essentials of Fluid Dynamics
ME 7280	Statistical Thermodynamics
OR 6205	Deterministic Operations Research
OR 7230	Probabilistic Operation Research
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
PHSC 5100	Concepts in Pharmaceutical Science
PHSC 6210	Drug Design, Evaluation, and Development
PHSC 6218	Biomedical Chemical Analysis
PHSC 6290	Biophysical Methods in Drug Discovery
PHYS 5260	Introduction to Nanoscience and Nanotechnology
PHYS 7301	Classical Mechanics/Math Methods
PHYS 7321	Computational Physics
PHYS 7731	Biological Physics 1
PHYS 7741	Biological Physics 2
PMST 6250	Advanced Physical Pharmacy
PMST 6252	Pharmacokinetics and Drug Metabolism
PMST 6254	Advanced Drug Delivery System
PSYC 5120	Proseminar in Sensation
PSYC 5130	Proseminar in Perception
PSYC 5180	Quantitative Methods 1
PSYC 5181	Quantitative Methods 2
PSYC 7300	Advanced Quantitative Analysis
PT 5133	Kinesiology
PT 5134	Lab for PT 5133
PT 5138	Neuroscience
PT 5139	Lab for PT 5138
PT 5150	Motor Control, Development, and Learning
PT 5151	Lab for PT 5150
PT 6215	Assistive Technology
SLPA 5111	Anatomy and Physiology of the Auditory System
SLPA 6301	Speech Science

Program Credit/GPA Requirements

48 total semester hours required

Minimum 3.000 GPA required

Bioengineering, PhD—Advanced Entry

Our interdisciplinary Doctor of Philosophy program in bioengineering draws on faculty across the university and reflects the significant strengths of bioengineering research in multiple areas. Students accepted to the bioengineering program will undertake a rigorous core

curriculum in basic bioengineering science followed by an immersion track curriculum. There are currently eight tracks from which to choose:

- Track 1: Biomedical Imaging and Signal Processing
- Track 2: Biomechanics and Mechanobiology
- Track 3: BioMEMs/BioNANO
- Track 4: Biochemical and Bioenvironmental Engineering
- Track 5: Motor Control
- Track 6: Biocomputing
- Track 7: Cell and Tissue Engineering
- Track 8: General Bioengineering Studies

Biology can inspire engineering. Increasingly, discoveries in the life sciences reveal processes, complexity, and control without analogy in the limited world of traditional engineering. Current methods of producing nanoscale control over molecules cannot reproduce the organization found in even the simplest organisms. Energy capture, robust control, remediation, and self-assembly are all employed with efficiency unparalleled by anything in today's laboratories. At the same time, traditional engineering disciplines struggle to find new and complex challenges. The last fifty years of basic life science research have gradually peeled the layers of complexity from biological processes, unmasking the fundamental underpinnings on which biological systems are constructed. Bioinspired engineering has the potential to transform the technological landscape of the twenty-first century. Astonishingly, it represents merely one of the myriad opportunities presented at the interface of biology and engineering.

The field of bioengineering is broad and includes all research at the interface of engineering and biology—this includes bioprocesses, environmental microbiology, biomaterials and tissue engineering, bioelectricity, biomechanics, biomedical and biological imaging, nanotechnology in medicine and the environment, and engineering design for human interfacing. At Northeastern, bioengineering PhD students have an opportunity to be trained to appreciate advances in bioengineering across a wide range of disciplines while they perform highly focused and cutting-edge bioengineering research with one of our many core or affiliated faculty members.

DEGREE REQUIREMENTS

Completion of the PhD degree requires students to successfully complete the following requirements:

- **Curriculum:** The curriculum comprises a strong fundamental, broad core of courses that is then coupled with one of a series of available tracks for depth in a particular field of study.
- **Qualifying examination (written and oral):** To qualify to continue in the PhD program, students must pass the bioengineering comprehensive qualifying examination, which comprises the synthesis of knowledge derived from the core curriculum and current literature presented in the form of an R21 NIH-style proposal. Oral defense of the proposal is required to pass the exam as well as satisfactory research progress and satisfactory academic standing. Details of the formal qualification exam procedure and timing are available in the bioengineering office and may be requested electronically at any time from the graduate director. Advanced Entry PhD students must successfully complete the qualifying examination (written and oral) within two years of entry.
- **Qualifying examination committee:** The qualifying examination committee is composed of a minimum of three members, two of whom must be selected from the list of bioengineering-affiliated faculty. In addition, one of the two affiliated faculty must have a primary appointment in the College of Engineering. The student's primary advisor may not sit on the qualifying examination committee.

- **Dissertation committee:** The dissertation committee is composed of a minimum of three members, two of whom must be selected from the list of bioengineering-affiliated faculty. In addition, one of the two affiliated faculty must have a primary appointment in the College of Engineering.
- **Area exam (dissertation prospectus/proposal):** PhD students must submit a "prospectus" to their dissertation committee in the form of an R21 NIH-style research plan and successfully defend the research plan in the form of an open presentation to their dissertation committee. The area exam should be completed as soon as is practical after successful completion of course work and qualifying exams.
- **Dissertation:** PhD candidates must satisfactorily complete and defend a dissertation describing original research in bioengineering in an open presentation to their dissertation committee.
- **Dissertation Course Requirements:** After achieving PhD candidacy, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (BIOE 9990). Upon completion of this sequence, the student must then register for Dissertation Continuation (BIOE 9996) in every semester (in each fall and spring term and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (BIOE 9996) until they fulfill the two-semester sequence of Dissertation (BIOE 9990).

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Exam Preparation—Doctoral (BIOE 8960), can be taken if needed to fulfill the full-time course registration requirement. Exam Preparation—Doctoral (BIOE 8960) is an individual instruction course, billed at 1 semester hour, and graded S or U. Exam Preparation—Doctoral (BIOE 8960) does not have any course content, and students must register in a section for which their research advisor is listed as the "instructor."

The curriculum for PhD students with advanced standing will be selected from the available core and elective courses under the guidance of the program director and the student's primary advisor. The advanced standing PhD degree requires a minimum of 16 semester hours of course work to be approved by the graduate director and a completed PhD dissertation. Advanced standing constitutes receipt of a relevant and accepted master's degree at a qualified institution.

The core emphasizes the breadth of topics that our graduates must appreciate as internationally competitive bioengineers. It utilizes existing courses within the College of Engineering as well as introducing new/external courses that are necessary and will be developed.

Track electives may be replaced with up to 12 semester hours of relevant independent studies Independent Study (BIOE 7978).

Requirements	Credits
Advisor-approved course work	16 SH (minimum)
Advanced seminar (register and complete four semesters)	0 SH
Dissertation	0 SH
Minimum semester hours required	16 SH

TRACK 1: BIOMEDICAL IMAGING AND SIGNAL PROCESSING

The biomedical imaging and signal processing track reflects Northeastern University's outstanding research profile in various aspects of biological and biomedical imaging and image processing and signal processing. This is evidenced by the Gordon Center for Subsurface

Sensing and Imaging Systems, the Center for Communications and Digital Signal Processing Research, and the strong externally funded active research groups and faculty whose interests lie at the intersection of imaging, signal processing technologies, and biological and medical applications.

The courses in this track concentrate largely on general mathematical methods for signal and image processing and image formation and on image acquisition modalities and applications. Research in this area takes place at the intersection of these technical streams, and students completing the track will have a sufficiently strong background in the component areas to be able to carry out high-quality research efforts.

TRACK 2: BIOMECHANICS AND MECHANOBIOLOGY

Biomechanics and mechanobiology are linked by the biological response to applied forces and strains. To understand the overall effect of load on biological systems, it is important to consider not only the deformation and shear rates that result from force application but also the short- and long-term biological responses. The biomechanics and mechanobiology track reflects this understanding and leverages the strong faculty research at Northeastern, which is attempting to tie biomechanics to biological responses at multiple scales.

The biomechanics track is designed to capitalize on the substantial expertise in the mechanical and industrial engineering department, which has a strong fundamental research program in biomechanics. Faculty in the department perform investigations that comprise theoretical, computational, and experimental investigations.

TRACK 3: BIOMEMS/BIONANO

The bioMEMS/bioNANO track reflects Northeastern University's strength as indicated by the NSF Center for High Rate Nanomanufacturing, the NSF/NCI Nanomedicine IGERT training grant, and the strong pharmaceutical sciences department. In addition, Northeastern also has a research presence in MEMS that, when combined with the bioengineering curriculum, presents significant interdisciplinary opportunities for students in the program.

TRACK 4: BIOCHEMICAL AND BIOENVIRONMENTAL

The track reflects strengths in biochemical engineering and bioenvironmental engineering by active research programs focused in pharmaceutical bioprocessing, biomaterials, tissue engineering, drug delivery, environmental microbiology, biotreatment/bioremediation, and environmental modeling.

TRACK 5: MOTOR CONTROL

The motor control track is designed to capitalize on the collective expertise of cross-disciplinary collaborations between existing Northeastern faculty whose research lies at the intersection of sensorimotor control systems, neuroscience, and dynamical systems. Insights into learning and coordination of functional motor behavior provide the basis for a better understanding of neurological diseases of motor function such as stroke, Parkinson's disease, and cerebral palsy. Insights will be the foundation for designing better therapy and rehabilitation.

TRACK 6: BIOCOMPUTING

The biocomputing track draws on strengths in computer engineering and computation applied to bioengineering applications.

TRACK 7: CELL AND TISSUE ENGINEERING

Cell and tissue engineering is a major strength at Northeastern University with several research labs focused on understanding and engineering living cells and tissues. These labs are elucidating the quantitative principles that govern cell fate decisions and are developing design strategies to promote the assembly and patterning

of multicellular systems into viable, functional tissues. Cells are remarkable physicochemical systems that sense, respond, and actively reshape their rich microenvironment. Parsing the dialogue between the microenvironment and cells and elucidating design strategies to engineer the dynamic cellular milieu has far-reaching implications for biomedicine, including applications such as tissue engineering and the development of novel therapeutic strategies.

This pioneering, multidisciplinary research is enabled by strengths at Northeastern in key foundational areas, such as biomolecular engineering, computational modeling, developmental biology, imaging, materials science, micro- and nanofluidics, mechanobiology, molecular cell biology, and systems biology.

Cell and tissue engineering is widely recognized as a core subfield of bioengineering. A formal track in this area offers our students a program of study that capitalizes on a major strength at Northeastern.

TRACK 8: GENERAL BIOENGINEERING STUDIES

The general bioengineering studies track provides students with the flexibility to create a custom course plan depending on their individual interests, under the strong advisement of the graduate director.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review

Qualifying examination (within two years of entry)

Dissertation committee

Area examination (dissertation prospectus/proposal)

Dissertation defense

Core Requirements

Code	Title	Hours
Seminar		
BIOE 7390	Seminar (Register and complete four semesters)	0

Approved Course Work

Select courses in consultation with faculty advisor.	16
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Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
BIOE 9990	Dissertation	

Program Credit/GPA Requirements

16 total semester hours required

Minimum 3.000 GPA required

Bioengineering, MSBioE

Students accepted to the Master of Science in Bioengineering program have four concentrations from which to choose:

- Concentration 1: Bioimaging and Signal Processing
- Concentration 2: Cell and Tissue Engineering
- Concentration 3: Biomechanics
- Concentration 4: Biomedical Devices

Concentrations

A concentration is required. Each concentration has two required courses and a list of technical electives from which the student should select three to five courses, depending on whether he or she selects the thesis option, project option, or course-only option.

CONCENTRATION IN BIOIMAGING AND SIGNAL PROCESSING

This concentration is appropriate for students interested in biomedical imaging and processing of a wide array of signals from biological systems and biomedical instruments. Two courses (Linear Systems Analysis (EECE 7200) and Applied Probability and Stochastic Processes (EECE 7204) are required of all students choosing this option. Extensive additional options are available as approved technical electives.

CONCENTRATION IN CELL AND TISSUE ENGINEERING

The cell and tissue engineering concentration is appropriate for students interested in molecular, cell, and tissue engineering. Two courses (Molecular Bioengineering (BIOE 5410) and Cellular Engineering (BIOE 5420) are required of all cell and tissue engineering students. There is an extensive list of approved technical electives to choose from to complete the degree.

CONCENTRATION IN BIOMECHANICS

Students who join the biomechanics concentration will cover multiscale mechanics, including whole-body movement, mechanical properties of biomaterials, and fluid mechanics of physiological fluids. The two courses required of all biomechanics concentration students are Multiscale Biomechanics (BIOE 5650) and Musculoskeletal Biomechanics (ME 5665).

CONCENTRATION IN BIOMEDICAL DEVICES

The biomedical devices concentration is appropriate for students interested in the design and implementation of biological devices and implants. Two core courses, Design of Biomedical Instrumentation (BIOE 5810) and Design, Manufacture, and Evaluation of Medical Devices (BIOE 5250), are required for all students in this concentration.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Bioengineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Bioengineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour-curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 33-semester-hour degree and certificate will require 17 hours of advisor-approved bioengineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Note: This major requires a concentration: biomechanics, biomedical devices, bioimaging and signal processing, or cell and tissue engineering. Consult your college administrator.

Core Requirements

Code	Title	Hours
Seminar		
BIOE 7390	Seminar	0
Required Core		
A grade of C or higher is required in each course:		
BIOE 5100	Medical Physiology	4
BIOE 6000	Principles of Bioengineering	1

Concentrations

Complete one of the following four concentrations:

- Bioimaging and Signal Processing (p. 136)
- Cell and Tissue Engineering (p. 136)
- Biomechanics (p. 136)
- Biomedical Devices (p. 137)

BIOIMAGING AND SIGNAL PROCESSING

Code	Title	Hours
Required Course Work		
A grade of C or higher is required.		
EECE 7200	Linear Systems Analysis	4
EECE 7204	Applied Probability and Stochastic Processes	4

Course Work Option

Complete 20 semester hours from the course list. 20

Project Option

BIOE 7890 Master's Project 4

Electives

Complete 16 semester hours from the course list. 16

Thesis Option

Complete the following (repeatable) course twice: 8

BIOE 7990 Thesis

Electives

Complete 12 semester hours from the course list. 12

Course List

BIOE 5320	Advanced Biomedical Measurements and Instrumentation	
BIOE 5235	Biomedical Imaging	
BIOE 7100	Special Topics in Biomedical Imaging and Signal Processing	
BIOL 5581	Biological Imaging	
EECE 5639	Computer Vision	
EECE 5648	Biomedical Optics	
EECE 7203	Complex Variable Theory and Differential Equations	
EECE 7204	Applied Probability and Stochastic Processes	
PHSC 6226	Imaging in Medicine and Drug Discovery	

CELL AND TISSUE ENGINEERING

Code	Title	Hours
Required Course Work		
A grade of C or higher is required.		
BIOE 5410	Molecular Bioengineering	4
BIOE 5420	Cellular Engineering	4

Course Work Option

Complete 20 semester hours from the course list. 20

Project Option

BIOE 7890 Master's Project 4

Electives

Complete 16 semester hours from the course list. 16

Thesis Option

Complete the following (repeatable) course twice: 8

BIOE 7990 Thesis

Electives

Complete 12 semester hours from the course list. 12

Course List

BIOE 5250	Design, Manufacture, and Evaluation of Medical Devices	
BIOE 5430	Principles and Applications of Tissue Engineering	
BIOE 5820	Biomaterials	
BIOL 5543	Stem Cells and Regeneration	
BIOL 6301	Molecular Cell Biology	
ME 5667	Solid Mechanics of Cells and Tissues	
NNMD 5370	Nanomedicine Research Techniques	
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market	

BIOMECHANICS

Code	Title	Hours
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Required Course Work

A grade of C or higher is required.

ME 5665 Musculoskeletal Biomechanics 4

BIOE 5650 Multiscale Biomechanics 4

Course Work Option

Complete 20 semester hours from the course list. 20

Project Option

BIOE 7890 Master's Project 4

Electives

Complete 16 semester hours from the course list. 16

Thesis Option

Complete the following (repeatable) course twice: 8

BIOE 7990 Thesis

Electives

Complete 12 semester hours from the course list. 12

Course List

BIOE 5630	Physiological Fluid Mechanics	
BIOE 7300	Special Topics in Biomechanics	
BIOL 5601	Multidisciplinary Approaches in Motor Control	
EECE 7200	Linear Systems Analysis	
EECE 7203	Complex Variable Theory and Differential Equations	
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
ME 5657	Finite Element Method	
ME 5659	Control Systems Engineering	
ME 5667	Solid Mechanics of Cells and Tissues	
ME 7210	Elasticity and Plasticity	

ME 7238	Advanced Finite Element Method
ME 7245	Fracture Mechanics and Failure Analysis
ME 7255	Continuum Mechanics

BIOMEDICAL DEVICES

Code	Title	Hours
Required Course Work		
A grade of C or higher is required.		
BIOE 5810	Design of Biomedical Instrumentation	4
BIOE 5250	Design, Manufacture, and Evaluation of Medical Devices	4
Course Work Option		
Complete 20 semester hours from the course list.		20
Project Option		
BIOE 7890	Master's Project	4
<i>Electives</i>		
Complete 16 semester hours from the course list.		16
Thesis Option		
Complete the following (repeatable) course twice:		8
BIOE 7990	Thesis	
<i>Electives</i>		
Complete 12 semester hours from the course list.		12
Course List		
BIOL 5587	Comparative Neurobiology	
BIOE 5850	Design of Implants	
BIOE 7400	Special Topics in Biomedical Devices	
CHEM 7247	Advances in Nanomaterials	
EECE 5606	Micro- and Nanofabrication	
ME 5659	Control Systems Engineering	
ME 5665	Musculoskeletal Biomechanics	
ME 5667	Solid Mechanics of Cells and Tissues	
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market	
NNMD 5370	Nanomedicine Research Techniques	
PHSC 6226	Imaging in Medicine and Drug Discovery	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Chemical Engineering

Website (<http://www.che.neu.edu>)

Thomas J. Webster, PhD

Professor and Chair
Art Zafiropoulo Chair in Engineering
th.webster@northeastern.edu

Richard West, PhD

Associate Professor and Associate Chair for Graduate Studies
r.west@northeastern.edu

313 Snell Engineering Center
617.373.2989
617.373.2209 (fax)

The department offers a Master of Science and a Doctor of Philosophy in Chemical Engineering. The MS degree is offered as either a thesis MS or a course work (nonthesis) MS degree. Most courses are in the late afternoon or early evening to make them accessible to part-time students with full-time industrial careers. A full-time MS student may apply for participation in the cooperative (co-op) education plan. MS students pursuing the thesis MS option should first gain the consent of their advisors prior to participating in the co-op plan. The course work MS may be taken part-time, but the thesis MS and PhD degrees are only offered as a full-time program. Any deviations from the curriculum must be addressed by petition to the graduate committee and will be considered on a case-by-case basis.

Candidates pursuing a thesis MS or a PhD can select thesis topics from a diverse range of faculty research interests. New graduate students can learn about ongoing research from individual faculty members, faculty websites, and graduate student seminars. Graduate student seminars are held on a regular basis and provide an interactive forum for learning and exchanging research ideas.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the MS degree.

Programs

Doctor of Philosophy (PhD)

- Chemical Engineering (p. 137)
- Chemical Engineering—Advanced Entry (p. 139)

Master of Science in Chemical Engineering (MSCHE)

- Chemical Engineering (p. 141)

Graduate Certificate

- Process Safety Engineering (p. 142)

Chemical Engineering, PhD

Each student admitted to the PhD program in chemical engineering will initially be designated a doctoral student. Upon successful completion of the requirements for doctoral candidacy as described below, a student is reclassified as a doctoral candidate. After establishing candidacy, a student must complete a program of academic course work and a dissertation under the direction of a dissertation advisor. All doctoral candidates must also pass a final oral examination.

Qualifying for Doctoral Candidacy

To qualify for doctoral candidacy, the student must demonstrate mastery of the four core courses of chemical engineering (thermodynamics, kinetics, transport, and mathematics). To become a doctoral candidate, students must maintain a grade-point average (GPA) of 3.500 or above in the four core courses and have no individual grade below a B in the four core courses.

In addition, each student must also demonstrate critical thinking, analysis, and experimental planning skills related to their dissertation research topic through a written candidacy proposal and an oral defense of this proposal. The student must pass, as determined by the student's

dissertation committee, this oral candidacy proposal defense in order to advance to doctoral candidacy. The oral presentation will be open to students, faculty, and the student's dissertation committee. The student earns the classification of doctoral candidate upon successful completion of these requirements.

Course Requirements

A minimum of 24 semester hours (SH) of academic course work, **not including any independent study credits**, beyond the bachelor's degree is required. The 24 SH must include at least 16 SH of academic course work (exclusive of thesis or dissertation) taken at Northeastern University. All four of the core courses (see table under Program Requirements) must be included in the student's academic graduate course work.

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (CHME 8960), can be taken if needed to fulfill full-time course registration. The course is an individual instruction course, billed at 1 SH, and graded S or U. There is no course content, and students must register in a section with their research or academic advisor as the "instructor."

After obtaining PhD candidacy, students are required to register for Dissertation (CHME 9990) for two consecutive semesters. This is then followed by registration for Dissertation Continuation (CHME 9996) in each semester thereafter until the dissertation has been completed and defended. **Note: No course credits are awarded for Dissertation (CHME 9990) or Dissertation Continuation (CHME 9996); however, a student is considered full-time if registered for either of these courses.**

All students pursuing a doctoral degree must enroll in the department's seminar course for each semester they are working toward their degree.

Students will be advised on their courses for the first semester by the associate chair for graduate studies. After the first semester, students will work with their dissertation advisor to determine appropriate courses and course schedule to meet their educational needs and aspirations. Upon consultation with the dissertation advisor, a student may take up to 44 SH of course credit without additional financial penalty. Students and dissertation advisors should keep in mind that the university residency requirement requires two semesters of academic studies after becoming a doctoral candidate.

Language Requirement

There is no foreign language requirement for the PhD degree. However, each candidate must be proficient in technical writing and oral presentation in the English language. The graduate committee may require additional course work to improve language proficiency, if necessary.

Residence Requirement

A student satisfies the residence requirement by completing one academic year of full-time graduate studies during two consecutive academic semesters after qualifying for doctoral candidacy. Additional required course work (exclusive of seminars) may be completed during this period. Students are required to be continually enrolled while pursuing the completion of the dissertation.

Dissertation

After a student establishes doctoral candidacy, they must complete a dissertation that embodies the results of extended original research and includes material suitable for publication. The student is responsible for proposing a dissertation committee to be approved by the dissertation advisor at least one month prior to the dissertation defense. The

committee must have a minimum of four members, in addition to the primary advisor. The primary dissertation advisor and at least one other committee member must be faculty members in the Department of Chemical Engineering. Additionally, one of the committee members must be external to the Department of Chemical Engineering. Committee membership is not limited to faculty at Northeastern University, nor to engineering faculty. The student is encouraged to consider experts in the dissertation topic and to work with the dissertation advisor to create a meaningful and helpful committee. The dissertation committee will approve the dissertation in its final form. The graduate school requirements for dissertation formatting and electronic submittal instructions can be found on the College of Engineering's webpage (<http://www.coe.neu.edu/student-services/dissertation/thesis-instructions>). Students are responsible for contacting the Graduate School of Engineering for any updates to dissertation requirements and appropriate deadlines.

Dissertation Defense and Final Oral Examination

This comprehensive examination includes the public dissertation defense as well as a final oral examination to include the subject matter of the doctoral dissertation and significant developments in the field of the dissertation work. The oral presentation will be open to the public, including students, faculty, and the student's committee.

Departure Prior to Dissertation Completion

Occasionally, students have to leave the Department of Chemical Engineering prior to completion of all degree requirements. In such instances, a student cannot submit a dissertation for credit beyond three years after he or she stops actively pursuing the research. Exceptions may be granted upon petition to the departmental graduate committee. Petitions must demonstrate extenuating circumstances and prove that the research is still of value to the profession.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Biannual review: at the end of fall and spring semesters

Dissertation proposal: within a year of completing all core courses

Dissertation defense: required before graduation

Core Requirements

A minimum of 24 semester hours of academic course work is required. Independent study credits do not count toward the 24 required semester hours.

Code	Title	Hours
Core Courses		
A cumulative 3.500 GPA is required for the 4 core classes.		
CHME 7320	Chemical Engineering Mathematics	4
CHME 7330	Chemical Engineering Thermodynamics (Statistical Thermodynamics may be taken in the place of Thermodynamics)	4
or CHME 7235	Introduction to Statistical Thermodynamics	
CHME 7340	Chemical Engineering Kinetics	4
CHME 7350	Transport Phenomena	4
Seminar		
Must be taken each semester:		
CHME 7390	Seminar	

Electives

Code	Title	Hours
Complete 8 semester hours. Consult your faculty advisor for acceptable courses:		
CHME 5101	Fundamentals of Chemical Engineering Analysis	
CHME 5137	Computational Modeling in Chemical Engineering	
CHME 5160	Drug Delivery: Engineering Analysis	
CHME 5240	Introduction to Polymer Science	
CHME 5510	Fundamentals in Process Safety Engineering	
CHME 5520	Process Safety Engineering—Chemical Reactivity, Reliefs, and Hazards Analysis	
CHME 5621	Electrochemical Engineering	
CHME 5630	Biochemical Engineering	
CHME 5631	Biomaterials Principles and Applications	
CHME 5632	Advanced Topics in Biomaterials	
CHME 5699	Special Topics in Chemical Engineering	
CHME 6610	Computational Programs in Process Safety for Relief and Scenario Modeling	
CHME 7235	Introduction to Statistical Thermodynamics	
CHME 7240	Polymer Science	
CHME 7260	Special Topics in Chemical Engineering	
CHME 7262	Special Topics in Process Safety	
CHME 7978	Independent Study	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
EMGT 5220	Engineering Project Management	
EMGT 6225	Economic Decision Making	
EMGT 6305	Financial Management for Engineers	
ME 5374	Special Topics in Mechanical Engineering	
BIOE 5410	Molecular Bioengineering	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CHME 9990	Dissertation	

Program Credit/GPA Requirements

24 total semester hours required
Minimum 3.000 GPA required

Chemical Engineering, PhD—Advanced Entry

Each student admitted to the PhD program in chemical engineering will initially be designated a doctoral student. Upon successful completion of the requirements for doctoral candidacy as described below, a student is reclassified as a doctoral candidate. After establishing candidacy, a student must complete a program of academic course work and a dissertation under the direction of a dissertation advisor. All doctoral candidates must also pass a final oral examination.

Qualifying for Doctoral Candidacy

To qualify for doctoral candidacy, the student must demonstrate mastery of the four core areas of chemical engineering (thermodynamics, kinetics, transport, and mathematics) through course performance. To become a doctoral candidate, students must have no grades below a B and must maintain a grade-point average (GPA) of 3.500 or above, typically at the end of the first year, as an average considering all four core courses.

In addition, each student must also demonstrate critical thinking, analysis, and experimental planning skills related to their dissertation research topic through a written candidacy proposal and an oral defense of this proposal. The student must pass, as determined by the student's dissertation committee, this oral candidacy proposal defense in order to advance to doctoral candidacy. The oral presentation will be open to students, faculty, and the student's committee. The student earns the classification of *doctoral candidate* upon successful completion of these requirements.

Course Requirements

A minimum of 24 semester hours (SH) of academic course work, **not including any independent study credits**, beyond the master's degree is required. The 24 SH must include at least 16 SH of academic course work (exclusive of thesis or dissertation) taken at Northeastern University. All four of the core courses (see table under Program Requirements tab) must be included in the student's academic graduate course work.

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (CHME 8960), can be taken if needed to fulfill full-time course registration. The course is an individual instruction course, billed at 1 SH, and graded S or U. There is no course content, and students must register in a section with their research or academic advisor as the "instructor."

After reaching PhD candidacy, students are required to register for Dissertation (CHME 9990) for two consecutive semesters. This is then followed by registration for Dissertation Continuation (CHME 9996) in each semester thereafter until the dissertation has been completed and defended.

Note: No course credits are awarded for Dissertation (CHME 9990) or Dissertation Continuation (CHME 9996); however, a student is considered full-time if registered for either of these courses. All students pursuing a doctoral degree must enroll in the department's seminar course for each semester they are matriculating toward their degree.

Students will be advised on their courses for the first semester by the associate chair of the Department of Chemical Engineering. After the first semester, students will work with their dissertation advisor to determine appropriate courses and course schedule to meet their educational needs and aspirations. Upon consultation with the dissertation advisor, a student may take up to 44 SH of course credit without additional financial penalty. Students and dissertation advisors should keep in mind that the requirements for doctoral candidacy include all four core courses and the proposal defense and that the university residency requirement requires two semesters of academic studies after becoming a doctoral candidate.

Language Requirement

There is no foreign language requirement for the PhD degree. However, each candidate must be proficient in technical writing and oral presentation in the English language. The graduate committee may require additional course work to improve language proficiency, if necessary.

Residence Requirement

A student satisfies the residence requirement by completing one academic year of full-time graduate studies during two consecutive academic semesters after qualifying for doctoral candidacy. Additional required course work (exclusive of seminars) may be completed during this period. Students are required to be continually enrolled while pursuing the completion of the dissertation.

Dissertation

After a student establishes doctoral candidacy, they must complete a dissertation that embodies the results of extended original research and includes material suitable for publication. The student is responsible for proposing a dissertation committee to be approved by the dissertation advisor at least one month prior to the dissertation defense. The committee must have a minimum of four members, in addition to the primary advisor. The primary dissertation advisor must be a faculty member in the Department of Chemical Engineering. Additionally, one of these committee members must be external to the Department of Chemical Engineering. Committee membership is not limited to faculty at Northeastern University, nor to engineering faculty. The student is encouraged to consider experts in the dissertation topic and to work with the dissertation advisor to create a meaningful and helpful committee. The dissertation committee will approve the dissertation in its final form. Required dissertation format is the same as for the MS thesis, and the graduate school requirements and electronic submittal instructions can be found on the College of Engineering website (<http://www.coe.neu.edu/student-services/dissertation/thesis-instructions>). Students are responsible for contacting the Graduate School of Engineering for any updates to dissertation requirements and appropriate deadlines.

Dissertation Defense and Final Oral Examination

This comprehensive examination includes the public dissertation defense as well as a final oral examination to include the subject matter of the doctoral dissertation and significant developments in the field of the dissertation work. The oral presentation will be open to the public, including students, faculty, and the student's committee.

Departure Prior to Dissertation Completion

Occasionally, students have left the Department of Chemical Engineering prior to completion of all degree requirements. In such instances, a student cannot submit a dissertation for credit beyond three years after he or she stops actively pursuing the research. Exceptions may be granted upon petition to the departmental graduate committee. Petitions must demonstrate extenuating circumstances and prove that the research is still of value to the profession.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Biannual review: at the end of fall and spring semesters

Dissertation proposal: within a year of completing all core courses

Dissertation defense: required before graduation

Core Requirements

A minimum of 24 semester hours of academic course work is required. Independent study credits do not apply to the 24 required semester hours.

Code	Title	Hours
Seminar		
Must be taken each semester.		

CHME 7390	Seminar	
Core Courses		
A cumulative 3.500 GPA is required for the 4 core classes.		
CHME 7320	Chemical Engineering Mathematics	4
CHME 7330	Chemical Engineering Thermodynamics (Statistical Thermodynamics may be taken in place of Thermodynamics)	4
	or CHME 7235	Introduction to Statistical Thermodynamics
CHME 7340	Chemical Engineering Kinetics	4
CHME 7350	Transport Phenomena	4

Electives

Code	Title	Hours
CHME 5101	Fundamentals of Chemical Engineering Analysis	4
CHME 5137	Computational Modeling in Chemical Engineering	4
CHME 5160	Drug Delivery: Engineering Analysis	4
CHME 5240	Introduction to Polymer Science	4
CHME 5510	Fundamentals in Process Safety Engineering	4
CHME 5520	Process Safety Engineering—Chemical Reactivity, Reliefs, and Hazards Analysis	4
CHME 5621	Electrochemical Engineering	4
CHME 5630	Biochemical Engineering	4
CHME 5631	Biomaterials Principles and Applications	4
CHME 5632	Advanced Topics in Biomaterials	4
CHME 5699	Special Topics in Chemical Engineering	4
CHME 6610	Computational Programs in Process Safety for Relief and Scenario Modeling	4
CHME 7235	Introduction to Statistical Thermodynamics	4
CHME 7240	Polymer Science	4
CHME 7260	Special Topics in Chemical Engineering	4
CHME 7262	Special Topics in Process Safety	4
CHME 7978	Independent Study	1-4
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	4
EMGT 5220	Engineering Project Management	4
EMGT 6225	Economic Decision Making	4
EMGT 6305	Financial Management for Engineers	4
ME 5374	Special Topics in Mechanical Engineering	4
BIOE 5410	Molecular Bioengineering	4

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CHME 9990	Dissertation	

Program Credit/GPA Requirements

24 total semester hours required
Minimum 3.000 GPA required

Chemical Engineering, MSCHE

The Master of Science in Chemical Engineering is normally pursued by students with a Bachelor of Science in Chemical Engineering or closely allied fields. Students wishing to pursue the master's degree but with undergraduate educational backgrounds other than chemical engineering may be required to complete supplementary undergraduate course work. These courses are in addition to the minimum course requirements. Students enrolled in the program are encouraged to seek guidance from their instructors and advisor regarding additional course work that may supplement the graduate curriculum.

Students originally admitted to the master's degree program who wish to switch to the PhD program must petition the associate chair for graduate studies and follow the procedure detailed under the administrative procedure section (p. 125) for the College of Engineering. If admission is granted, then the student must satisfy all the requirements of the doctoral degree program, including the requirements for doctoral candidacy.

Course Requirements

A minimum of 32 semester hours of academic work is required to qualify for the Master of Science degree in chemical engineering.

If pursuing a thesis option, at least 8 semester hours of thesis credit must be included as part of these 32 semester hours of credits. In addition, each student pursuing a thesis option must enroll in the department's seminar course for each semester they are matriculating toward their degree. Students enrolled in the department's seminar course are encouraged to participate in the seminar by providing a research presentation regarding their research project under the guidance of their advisor. The faculty advisor and the student establish the sequence of courses that students take to pursue the Master of Science in Chemical Engineering.

If pursuing a nonthesis option, students must complete a minimum of 32 semester hours of course work and no enrollment in the seminar course is required. See required core courses and example elective courses for all graduate students (p. 141).

Degree Requirements	Thesis Option	Nonthesis Option
Required core courses	16 SH	16 SH
Master of Science proposal	Required	N/A
Master of Science thesis	8 SH	N/A
Seminar	0 SH	N/A
Elective courses ¹	8 SH	16 SH
Minimum semester hours required ²	32 SH	32 SH

¹ Students may complete a maximum of 8 semester hours (thesis option) or 12 semester hours (nonthesis options) of course work for credit outside the Department of Chemical Engineering under the guidance of their advisor and approval of the chemical engineering graduate program director.

² Exclusive of any preparatory undergraduate courses.

Thesis Requirements

Students pursuing a Master of Science in Chemical Engineering with thesis must submit to the Graduate School of Engineering a written thesis that is approved by the thesis committee and department

chair. See the graduate school requirements and electronic submittal instructions (<http://www.coe.neu.edu/student-services/dissertation/thesis-instructions>). MS with thesis students must also complete an oral master's thesis defense in order to successfully complete the program. The student will be expected to form a master's thesis committee, composed of a minimum of three members—one who is the advisor, one other faculty member from the chemical engineering department, and one member from outside the department. The oral presentation will be open to the public, including students, faculty, and the candidate's committee.

Part-time Students

Part-time students may progress according to their plans and time constraints but within the seven-year time limit. A minimum of 32 semester hours of academic course work is required for part-time students. The thesis and seminar course are not required for part-time students pursuing a master's degree.

Master of Science students wishing to change their status from part-time to full-time must notify the chemical engineering department and make a formal petition to the Graduate School of Engineering. Refer to the regulations of the Graduate School of Engineering for further information on academic administrative policies.

Departure Prior to Thesis Completion

Occasionally, students have to leave the chemical engineering department prior to completion of all degree requirements. In such instances, longtime intervals have often elapsed before thesis or manuscript submission. Accordingly, the department has adopted the guideline that a student cannot submit a thesis for credit beyond three years after the student stops actively pursuing the research. Exceptions may be granted upon petition to the departmental graduate committee. Petitions must demonstrate extenuating circumstances and prove that the research is still of value to the profession.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Chemical Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Chemical Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors and 16 semester hours of required chemical engineering course work.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CHME 7320	Chemical Engineering Mathematics	4
CHME 7330	Chemical Engineering Thermodynamics (Statistical Thermodynamics can be substituted for Thermodynamics)	4
or CHME 7235	Introduction to Statistical Thermodynamics	
CHME 7340	Chemical Engineering Kinetics	4
CHME 7350	Transport Phenomena	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p. 142)		16

THESIS OPTION

Code	Title	Hours
Thesis		
Complete 8 semester hours from the following (CHME 7990 is repeatable):		8
CHME 7390	Seminar	
CHME 7990	Thesis	

Electives

Complete 8 semester hours from the course list below. (p. 142)	8
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Course List

Code	Title	Hours
CHME 5101	Fundamentals of Chemical Engineering Analysis	4
CHME 5137	Computational Modeling in Chemical Engineering	4
CHME 5160	Drug Delivery: Engineering Analysis	4
CHME 5240	Introduction to Polymer Science	4
CHME 5510	Fundamentals in Process Safety Engineering	4
CHME 5520	Process Safety Engineering—Chemical Reactivity, Reliefs, and Hazards Analysis	4
CHME 5630	Biochemical Engineering	4
CHME 5631	Biomaterials Principles and Applications	4
CHME 5632	Advanced Topics in Biomaterials	4
CHME 5699	Special Topics in Chemical Engineering	4
CHME 6610	Computational Programs in Process Safety for Relief and Scenario Modeling	4
CHME 7235	Introduction to Statistical Thermodynamics	4
CHME 7240	Polymer Science	4
CHME 7260	Special Topics in Chemical Engineering	4
CHME 7262	Special Topics in Process Safety	4
CHME 7978	Independent Study	1-4
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	4
EMGT 5220	Engineering Project Management	4

EMGT 6225	Economic Decision Making	4
EMGT 6305	Financial Management for Engineers	4
ME 5374	Special Topics in Mechanical Engineering	4
BIOE 5410	Molecular Bioengineering	4

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Process Safety Engineering, Graduate Certificate

The Graduate Certificate in Process Safety Engineering focuses on the integration of chemical engineering skills with the knowledge of process safety and regulation with specific attention on designing and developing solutions for industrial firms with the goal of creating environments that are safer and in compliance with regulatory rules and regulations.

This four-course graduate certificate seeks to provide students with opportunities to apply the fundamentals of chemical engineering knowledge and skills to lead efforts within companies to plan and implement process safety designs that assist in meeting the regulatory requirements and confirming code compliance within an industrial firm in order to maintain the safety, health, and welfare of their employees and the public as well as making industrial firms safer and profitable.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Process Safety		
CHME 5510	Fundamentals in Process Safety Engineering	4
CHME 5520	Process Safety Engineering—Chemical Reactivity, Reliefs, and Hazards Analysis	4
Relief and Scenario Modeling		
CHME 6610	Computational Programs in Process Safety for Relief and Scenario Modeling	4
Special Topics		
CHME 7262	Special Topics in Process Safety	4

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Civil and Environmental Engineering

Website (<http://www.civ.neu.edu>)

Jerome F. Hajjar, PhD, PE
CDM Smith Professor and Chair

Haris N. Koutsopoulos, PhD
Professor and Associate Chair for Graduate Studies

400 Snell Engineering Center
617.373.2444

617.373.4419 (fax)

Overview

With a strategic focus in urban engineering, and through a range of teaching and research strengths, anchored by several multidisciplinary, multi-institutional centers and programs, the Department of Civil and Environmental Engineering at Northeastern University prepares future master's and PhD graduates to address the global, complex, and ever-evolving engineering challenges of our time by building on the department's current strengths and expanding into vital areas. Three overarching themes are emphasized: environmental health, civil infrastructure security, and sustainable resource engineering. These themes are aligned with the department's premier strengths in simulation (both computational and experimental), smart sensing, data and network science, and urban informatics.

The department's strategic focus on urban engineering gives our graduates the opportunity to make real-world impact on and long-lasting contributions to the well-being and development of society. Within our graduate programs, students work alongside world-class faculty on advanced research and courses, developing a solid base for their careers.

Mission of the Department

The mission for the Department of Civil and Environmental Engineering is to provide a premier undergraduate and graduate education to help prepare globally oriented civil and environmental engineering leaders; to conduct world-class, use-inspired disciplinary and interdisciplinary research; and to serve a diverse constituency through public service and outreach.

Academic Programs

MASTER OF SCIENCE DEGREE

The department offers four MS degree programs and concentration options. Students in all MS programs must complete a minimum of 32 semester hours of approved course work with a minimum grade-point average (GPA) of 3.000. Options for a master's thesis or report in place of course work are available. All civil and environmental engineering master's programs are available on a full-time or part-time basis. At the master's level, the following degrees are offered:

1. Master of Science in Civil Engineering with a concentration in:

- Construction management
- Environmental and water systems
- Geotechnical/geoenvironmental engineering
- Structural engineering
- Transportation engineering

2. Master of Science in Environmental Engineering

3. Master of Science in Engineering and Public Policy with a concentration in:

- Energy and environment
- Infrastructure resilience

4. Master of Science in Sustainable Building Systems

DOCTOR OF PHILOSOPHY (PHD) DEGREE

The department offers the following PhD degrees: PhD in Civil Engineering and Interdisciplinary PhD. Applicants are admitted to the

PhD program either directly after earning a suitable bachelor's degree or after earning a master's degree (advanced entry).

The doctoral program is designed to be flexible with respect to subject area and may be adapted to any subject area in civil and environmental engineering, including interdisciplinary options within the department or across departments or colleges. The PhD is awarded to students who demonstrate high academic achievement and research competence in the field of civil engineering. Students must pursue the PhD program on a basis consistent with the residence requirements for the degree that may be found under the Degree Requirements tab.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the MS degree.

Programs

Doctor of Philosophy (PhD)

- Civil Engineering (p. 143)
- Civil Engineering—Advanced Entry (p. 145)

Master of Science (MS)

- Engineering and Public Policy with Concentration in Energy and Environment (p. 146)
- Engineering and Public Policy with Concentration in Infrastructure Resilience (p. 147)

Master of Science in Civil Engineering (MSCivE)

- Civil Engineering with Concentration in Construction Management (p. 148)
- Civil Engineering with Concentration in Environmental and Water Systems (p. 149)
- Civil Engineering with Concentration in Geotechnical/Geoenvironmental Engineering (p. 150)
- Civil Engineering with Concentration in Structural Engineering (p. 151)
- Civil Engineering with Concentration in Transportation (p. 152)

Master of Science in Environmental Engineering (MSENVE)

- Environmental Engineering (p. 154)

Master of Science in Sustainable Building Systems (MSSBS)

- Sustainable Building Systems (p. 155)

Civil Engineering, PhD

Awarding of the Doctor of Philosophy degree is based on exceptional performance in course work as well as evidence of ability to formulate and execute original research. The PhD program has two components:

1. An academic program of graduate-level courses that provides depth in a specific area of civil engineering (the major field) as well as other course work that provides additional exposure at an advanced level to one or more disciplines

- The dissertation, an extended independent research effort on a relevant technical problem resulting in an original contribution to the field

Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral area exams) and all the required course work.

Each student's mastery of subject matter is measured by a qualifying examination covering a subset of topics selected from the major field. A doctoral dissertation committee periodically monitors research progress, and the candidate is required to present and defend his or her research results before the doctoral dissertation committee upon completion of the work.

Course Work Requirement

The academic program must include at least 52 semester hours of graduate-level course work beyond the bachelor's degree. Students with a master's degree in civil engineering must complete a minimum of 20 semester hours of course work at Northeastern University. A student may count no more than 4 semester hours of independent study (such as special project in civil engineering) toward the minimum course requirements. A minimum of 40 semester hours must be related to the major field but may include courses from other departments when appropriate.

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Exam Preparation—Doctoral (CIVE 8960), can be taken if needed to fulfill full-time course registration. The course is an individual instruction course, billed at 1 semester hour, and graded S or U. There is no course content, and students must register in a section with their research or academic advisor as the "instructor."

Upon successful completion of the qualifying exam and the majority of required course work, each doctoral candidate must register in two consecutive semesters for Dissertation (CIVE 9990). Upon completion of this sequence, the candidate must register for Dissertation Continuation (CIVE 9996) in every semester until the dissertation is complete. Students may not register for Continuation until they fulfill the two-semester dissertation sequence.

Qualifying Examination and Degree Candidacy

The qualifying exam includes written and oral components. Its content depends upon the educational background and objectives of the student. In general, the written component covers subject matter at the master's degree level selected from the major field and includes basic engineering and science disciplines, as well as civil engineering application areas. The oral component measures general comprehension and aptitude for research. If a student fails the exam, he or she may retake it one more time with the permission of the qualifying examination committee.

PhD students who start their graduate program at Northeastern with a BS degree shall take the qualifying exam within the first 30 months after entering the program. Upon successful completion of the exam and all required course work, the student is classified as a doctoral candidate.

Comprehensive Examination

The comprehensive exam is a defense of the doctoral research work and an examination on subject matter related to the dissertation area.

Dissertation

Once degree candidacy is established, a doctoral candidate may proceed with his or her dissertation. The candidate must write a dissertation

proposal and name a civil and environmental engineering (CEE) faculty member as the dissertation advisor. A doctoral dissertation committee formed by the student and his or her dissertation advisor will monitor progress and approve the final document. The doctoral dissertation committee shall have no fewer than four members, at least two of whom must be full-time faculty from the CEE department.

Each student, along with a faculty advisor, must jointly develop a proposal defining the content of the academic program, subject to review by the dissertation committee. Intellectual rigor, connectivity of subject matter, and compatibility with departmental interests are critical issues. The doctoral dissertation committee's approval of the proposal represents a mutual agreement between the student and the committee. The CEE department encourages flexibility in program definition, especially in areas where complementary courses exist in other departments or where expertise resides outside the department and where the objective is to introduce new technology in civil engineering practice.

Each doctoral candidate must defend his or her dissertation within seven years from the start of the PhD program.

Residence Requirement

After achieving PhD candidacy, students must complete at least two successive semesters of full-time study on campus to establish residence. The total effort for a PhD program involves a minimum of three years of full-time work beyond the bachelor's degree. Students who enter the doctoral program with a Master of Science degree may complete the requirements in less time but should anticipate at least two years of full-time effort.

Language Requirement

Each doctoral candidate must be proficient in technical writing and oral presentation in the English language. The qualifying examination committee may require additional course work in the case of any deficiency in these areas.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination and comprehensive examination
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

Complete 52 semester hours of approved course work. Consult your faculty advisor for acceptable courses. Please note that a maximum of 4 semester hours of Independent Study (CIVE 7978) will be accepted toward the 52-semester-hour requirement.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CIVE 9990	Dissertation	

Program Credit/GPA Requirements

52 total semester hours required
Minimum 3.000 GPA required

Civil Engineering, PhD—Advanced Entry

Awarding of the Doctor of Philosophy degree is based on exceptional performance in course work as well as evidence of ability to formulate and execute original research. The PhD program has two components:

1. An academic program of graduate-level courses that provides depth in a specific area of civil engineering (the major field) as well as other course work that provides additional exposure at an advanced level to one or more disciplines
2. The dissertation, an extended independent research effort on a relevant technical problem resulting in an original contribution to the field

Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral area exams) and all the required course work.

Each student's mastery of subject matter is measured by a qualifying examination covering a subset of topics selected from the major field. A doctoral dissertation committee periodically monitors research progress, and the candidate is required to present and defend his or her research results before the doctoral dissertation committee upon completion of the work.

Course Work Requirement

The academic program must include at least 52 semester hours of graduate-level course work beyond the bachelor's degree. Students with a master's degree in civil engineering must complete a minimum of 20 semester hours of course work at Northeastern University. A student may count no more than 4 semester hours of independent study (such as special project in civil engineering) toward the minimum course requirements. A minimum of 40 semester hours must be related to the major field but may include courses from other departments when appropriate.

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Exam Preparation—Doctoral (CIVE 8960), can be taken if needed to fulfill full-time course registration. The course is an individual instruction course, billed at 1 semester hour, and graded S or U. There is no course content, and students must register in a section with their research or academic advisor as the "instructor."

Upon successful completion of the qualifying exam and the majority of required course work, each doctoral candidate must register in two consecutive semesters for Dissertation (CIVE 9990). Upon completion of this sequence, the candidate must register for Dissertation Continuation (CIVE 9996) in every semester until the dissertation is complete. Students may not register for Continuation until they fulfill the two-semester dissertation sequence.

Qualifying Examination and Degree Candidacy

The qualifying exam includes written and oral components. Its content depends upon the educational background and objectives of the student. In general, the written component covers subject matter at the master's degree level selected from the major field and includes basic engineering and science disciplines, as well as civil engineering application areas. The oral component measures general comprehension and aptitude for research. If a student fails the exam, he or she may retake it one more time with the permission of the qualifying examination committee.

Students must take the qualifying exam during the first 18 months of their PhD program. Upon successful completion of the exam and all required course work, the student is classified as a doctoral candidate.

Comprehensive Examination

The comprehensive exam is a defense of the doctoral research work and an examination on subject matter related to the dissertation area.

Dissertation

Once degree candidacy is established, a doctoral candidate may proceed with his or her dissertation. The candidate must write a dissertation proposal and name a civil and environmental engineering faculty member as the dissertation advisor. A doctoral dissertation committee formed by the student and his or her dissertation advisor will monitor progress and approve the final document. The doctoral dissertation committee shall have no fewer than four members, at least two of whom must be full-time faculty from the Department of Civil and Environmental Engineering (CEE).

Each student, along with a faculty advisor, must jointly develop a proposal defining the content of the academic program, subject to review by the dissertation committee. Intellectual rigor, connectivity of subject matter, and compatibility with departmental interests are critical issues. The doctoral dissertation committee's approval of the proposal represents a mutual agreement between the student and the committee. The CEE department encourages flexibility in program definition, especially in areas where complementary courses exist in other departments or where expertise resides outside the department and where the objective is to introduce new technology in civil engineering practice.

Each doctoral candidate must defend his or her dissertation within seven years from the start of the PhD program.

Residence Requirement

After achieving PhD candidacy, students must complete at least two successive semesters of full-time study on campus to establish residence. The total effort for a PhD program involves a minimum of three years of full-time work beyond the bachelor's degree. Students who enter the doctoral program with a Master of Science degree may complete the requirements in less time but should anticipate at least two years of full-time effort.

Language Requirement

Each doctoral candidate must be proficient in technical writing and oral presentation in the English language. The qualifying examination committee may require additional course work in the case of any deficiency in these areas.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination and comprehensive examination
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

Complete 20 semester hours of approved course work. Consult your faculty advisor for acceptable courses. Please note that a maximum of 4 semester

hours of Independent Study (CIVE 7978) will be accepted toward the 20-semester-hour requirement.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CIVE 9990	Dissertation	

Program Credit/GPA Requirements

20 total semester hours required
Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Energy & Environment, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Energy and Environment with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Energy and Environment in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved energy and environment technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Energy and Environment		
CIVE 7272 or ENGR 5670	Air Quality Management Sustainable Energy: Materials, Conversion, Storage, and Usage	4

Environmental Systems Modeling

Complete 4 semester hours from the following:		4
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Agent-Based Modeling)	

Economics

Complete 4 semester hours from the following:		4
PPUA 5260	Ecological Economics	
ECON 7210	Applied Microeconomic Policy Analysis	
LPSC 6313	Economic Analysis for Law, Policy, and Planning	

Public Policy and Analysis

Complete 4 semester hours from the following:		4
LPSC 7311	Strategizing Public Policy	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6509	Techniques of Program Evaluation	

Statistics

Complete 4 semester hours from the following:		4
CIVE 7100	Time Series and Geospatial Data Sciences	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
LPSC 7215	Advanced Quantitative Techniques	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the Energy and Environment Course List below.		12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Energy and Environment Course List below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Energy and Environment Course List below.		4

Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Energy and Environment Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5300	Environmental Engineering Laboratory	
CIVE 7252	Water Engineering, Resources, and Energy Recovery	
CIVE 7261	Surface Water Quality Modeling	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Hydraulic Modeling)	
EMGT 6225	Economic Decision Making	
ENVR 5210	Environmental Planning	
ENVR 5260	Geographical Information Systems	
ME 5645	Environmental Issues in Manufacturing and Product Use	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	

Program Credit/GPA Requirements

32 total semester hours required
 Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Infrastructure Resilience, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Infrastructure Resilience with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Infrastructure Resilience in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved infrastructure resilience technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Infrastructure Resilience		
CIVE 7110	Critical Infrastructure Resilience	4
Environmental Systems Modeling		
Complete 4 semester hours from the following:		4
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Agent-based Modeling)	
Economics		
Complete 4 semester hours from the following:		4
ECON 7210	Applied Microeconomic Policy Analysis	
LPSC 6313	Economic Analysis for Law, Policy, and Planning	
Public Policy and Analysis		
Complete 4 semester hours from the following:		4
LPSC 7311	Strategizing Public Policy	

PPUA 6506	Techniques of Policy Analysis	
PPUA 6509	Techniques of Program Evaluation	
Statistics		
Complete 4 semester hours from the following:		4
CIVE 7100	Time Series and Geospatial Data Sciences	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
LPSC 7215	Advanced Quantitative Techniques	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the infrastructure course list below.		12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Infrastructure course list below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Infrastructure course list below.		4

Infrastructure Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
EMGT 6225	Economic Decision Making	
ENVR 5260	Geographical Information Systems	
IA 5250	Decision Making for Critical Infrastructure	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
IE 7290	Reliability Analysis and Risk Assessment	
ME 5645	Environmental Issues in Manufacturing and Product Use	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
PPUA 7239	Problems in Metropolitan Policymaking	
PPUA 7240	Health Policy and Politics	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Civil Engineering with Concentration in Construction Management, MSCivE

This program is intended for students interested in construction management and engineering or a closely related field. It includes required core courses primarily from the Department of Civil and Environmental Engineering, complemented by electives in civil and environmental engineering and other departments such as mechanical and industrial engineering and business administration. Based on proven proficiency in given areas, students may waive certain core courses and replace them with alternate elective courses.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	18 SH	18 SH	18 SH
Elective courses	10 SH	6 SH	14 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Civil Engineering with a Concentration in Construction Management with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Civil Engineering with a Concentration in Construction Management in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 33-semester-hour degree and certificate will require 17 hours of advisor-approved construction management technical courses.

Engineering Leadership (p. 222)

ENGINEERING BUSINESS

Master's Degree in Civil Engineering with Concentration in Construction Management with Graduate Certificate in Engineering Business

Students may complete a Master of Science in Civil Engineering with Concentration in Construction Management in addition to earning a Graduate Certificate in Engineering Business. Students must apply and be admitted to the Galante Engineering Business Program in order to pursue this option. The program requires the applicant to have earned or be in a program to earn a Bachelor of Science in Engineering from Northeastern University. The integrated 32-semester-hour degree and certificate will require 16 semester hours of the core courses and 16

semester hours from the outlined business-skill curriculum. The course work, along with participation in cocurricular professional development elements, earn the Graduate Certificate in Engineering Business.

Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CIVE 5221	Construction Project Control and Organization	2
CIVE 7220	Construction Management	4
CIVE 7230	Legal Aspects of Civil Engineering	4
EMGT 6305	Financial Management for Engineers	4
IE 6200	Engineering Probability and Statistics	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 14 semester hours from the course list below.		14

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 10 semester hours from the course list below.		10

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 6 semester hours from the course list below.		6

Course List

Code	Title	Hours
OR 6205	Deterministic Operations Research	
ACCT 6200	Financial Reporting and Managerial Decision Making 1	
ACCT 6201	Financial Reporting and Managerial Decision Making 2	
CIVE 5231	Alternative Project Delivery Systems in Construction	
CIVE 7240	Construction Equipment and Modeling	
CIVE 7301	Advanced Soil Mechanics	
CIVE 7302	Advanced Foundation Engineering	
EMGT 5300	Engineering/Organizational Psychology	
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5100	Product Development for Engineers	
IE 5617	Lean Concepts and Applications	
IE 5640	Data Mining for Engineering Applications	
or IE 7275	Data Mining in Engineering	
IE 7215	Simulation Analysis	

IE 7290	Reliability Analysis and Risk Assessment
INFO 6210	Data Management and Database Design
INFO 6215	Business Analysis and Information Engineering
INFO 6245	Planning and Managing Information Systems Development
SBSY 5300	Information Systems for Integrated Project Delivery

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Civil Engineering with Concentration in Environmental and Water Systems, MSCIVE

This program integrates the study of infrastructure; hydrology; hydraulics; numerical modeling; remote sensing; spatial and temporal data analysis; and physical, chemical, and biological processes that impact the water and air quality to provide students with the knowledge and tools for developing and managing sustainable, resilient water resources and infrastructure. It includes required core courses from the Department of Civil and Environmental Engineering, complemented by electives in electrical and computer engineering, mechanical and industrial engineering, and earth and environmental sciences.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	8 SH	8 SH	8 SH
Restricted electives	12 SH	12 SH	12 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Civil Engineering with Concentration in Environmental and Water Systems with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Civil Engineering with Concentration in Environmental and Water Systems in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree

and certificate will require 16 hours of advisor-approved environmental and water systems technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 8 semester hours of the following:		8
CIVE 7250	Environmental Chemistry	
CIVE 7251	Environmental Biological Processes	
CIVE 7260	Hydrologic Modeling	
CIVE 7261	Surface Water Quality Modeling	
CIVE 7272	Air Quality Management	
CIVE 7392	Special Topics in Environmental Engineering (Hydraulic Modeling)	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the Restricted Elective List below.		12
Complete 12 semester hours from the Other Elective List below.		12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 12 semester hours from the Restricted Elective List below.		12
Complete 8 semester hours from the Other Elective List below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 12 semester hours from the Restricted Elective List below.		12
Complete 4 semester hours from the Other Elective List below.		4

Course Lists

RESTRICTED ELECTIVE LIST

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	

CIVE 5280	Remote Sensing of the Environment
CIVE 5300	Environmental Engineering Laboratory
CIVE 5536	Hydrologic Engineering
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)
CIVE 6777	Climate Hazards and Resilient Cities Abroad
CIVE 6778	Climate Adaptation and Policy Abroad
CIVE 7100	Time Series and Geospatial Data Sciences
CIVE 7110	Critical Infrastructure Resilience
CIVE 7252	Water Engineering, Resources, and Energy Recovery
CIVE 7255	Environmental Physical/Chemical Processes
CIVE 7392	Special Topics in Environmental Engineering (Agent Based Modeling)

OTHER ELECTIVE LIST

Any required core course not used to meet the required core course or restricted elective requirements can be taken as another elective. Any restricted elective not used to meet the restricted elective requirement can be taken as another elective.

Code	Title	Hours
EECE 7204	Applied Probability and Stochastic Processes	
ENVR 5260	Geographical Information Systems	
EEMB 5516	Oceanography	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
IE 7290	Reliability Analysis and Risk Assessment	
MATH 7341	Probability 2	
MATH 7343	Applied Statistics	
MATH 7344	Regression, ANOVA, and Design	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Civil Engineering with Concentration in Geotechnical/Geoenvironmental Engineering, MSCivE

This program includes study in the areas of soil mechanics/foundations and geoenvironmental engineering. It includes studies of soil and related earth materials for problems related to the protection of human health and the environment. Related areas include soil mechanics, fate/transport in subsurfaces, subsurface remediation, and others. The degree requirements include core courses from the Department of Civil and Environmental Engineering, complemented by electives in civil and environmental engineering, as well as electives from other departments such as mechanical and industrial engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	8 SH	8 SH	8 SH

Elective courses	20 SH	16 SH	24 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Civil Engineering with a Concentration in Geotechnical/Geoenvironmental Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Civil Engineering with a Concentration in Geotechnical/Geoenvironmental Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved geotechnical/geoenvironmental engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CIVE 7301	Advanced Soil Mechanics	4
CIVE 7302	Advanced Foundation Engineering	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
	Complete 24 semester hours from the Elective Course List below.	24

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
	Complete 20 semester hours from the Elective Course List below.	20

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
	Complete 16 semester hours from the Elective Course List below.	16

Elective Course List

Code	Title	Hours
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5536	Hydrologic Engineering	
CIVE 7230	Legal Aspects of Civil Engineering	
CIVE 7240	Construction Equipment and Modeling	
CIVE 7250	Environmental Chemistry	
CIVE 7251	Environmental Biological Processes	
CIVE 7260	Hydrologic Modeling	
CIVE 7311	Soil and Foundation Dynamics	
CIVE 7312	Earthquake Engineering	
CIVE 7330	Advanced Structural Analysis	
CIVE 7331	Structural Dynamics	
IE 6200	Engineering Probability and Statistics	
IE 7290	Reliability Analysis and Risk Assessment	
ME 5657	Finite Element Method	
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Civil Engineering with Concentration in Structural Engineering, MSCivE

This program is designed for students with career goals in structural engineering and structural design. The program includes courses in structural analysis and design, structural mechanics, dynamics of structures, earthquake engineering, wind engineering, and structural health monitoring. The degree requirements include core courses from the Department of Civil and Environmental Engineering, complemented by electives in civil and environmental engineering, as well as electives from other departments such as mechanical and industrial engineering and mathematics.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	8 SH	8 SH	8 SH
Restricted electives	12 SH	12 SH	12 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP**Master's Degree in Civil Engineering with Concentration in Structural Engineering with Graduate Certificate in Engineering Leadership**

Students may complete a Master of Science in Civil Engineering with Concentration in Structural Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved structural engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CIVE 7330	Advanced Structural Analysis	4
CIVE 7331	Structural Dynamics	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
	Complete 12 semester hours from the Restricted Elective List below.	12
	Complete 12 semester hours from the Other Elective List below.	12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
	Complete 12 semester hours from the Restricted Elective List below.	12
	Complete 8 semester hours from the Other Elective List below.	8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
	Complete 12 semester hours from the Restricted Elective List below.	12
	Complete 4 semester hours from the Other Elective List below.	4

Course Lists**RESTRICTED ELECTIVE LIST**

Code	Title	Hours
CIVE 5522	Structural Analysis 2	
CIVE 5525	Prestressed Concrete Design	
CIVE 5699	Special Topics in Civil Engineering (Structural Systems)	
CIVE 5699	Special Topics in Civil Engineering (Vibration-based Structural Health Monitoring)	

CIVE 7340	Seismic Analysis and Design
CIVE 7341	Structural Reliability
CIVE 7342	System Identification
CIVE 7350	Behavior of Concrete Structures
CIVE 7351	Behavior of Steel Structures
CIVE 7354	Wind Engineering
CIVE 7355	Advanced Bridge Design
CIVE 7357	Advanced Structural Mechanics

OTHER ELECTIVE LIST

Any restricted elective not used to meet the restricted elective requirement can be taken as another elective.

Code	Title	Hours
CIVE 7301	Advanced Soil Mechanics	
CIVE 7302	Advanced Foundation Engineering	
CIVE 7311	Soil and Foundation Dynamics	
CIVE 7312	Earthquake Engineering	
MATH 7241	Probability 1	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	
MATL 7365	Properties and Processing of Electronic Materials	
ME 5240	Computer Aided Design and Manufacturing	
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
ME 5657	Finite Element Method	
ME 5659	Control Systems Engineering	
ME 6200	Mathematical Methods for Mechanical Engineers 1	
ME 6201	Mathematical Methods for Mechanical Engineers 2	
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	
ME 7210	Elasticity and Plasticity	
ME 7232	Theory of Plates and Shells	
ME 7238	Advanced Finite Element Method	
ME 7245	Fracture Mechanics and Failure Analysis	
ME 7255	Continuum Mechanics	

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Civil Engineering with Concentration in Transportation, MSCivE

This program is designed for students with career goals in transportation engineering and transportation planning. The degree requirements include core courses from the Department of Civil and Environmental Engineering, complemented by electives in civil and environmental engineering and by related courses in applied mathematics, engineering, economics, policy, and management.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	12 SH	12 SH	12 SH
Restricted electives	8 SH	8 SH	12 SH
Other electives	8 SH	4 SH	8 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Civil Engineering with Concentration in Transportation with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Civil Engineering with Concentration in Transportation in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved transportation engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
CIVE 5373	Transportation Systems: Analysis and Planning	4
CIVE 5376	Traffic Engineering and Sustainable Urban Street Design	4
IE 6200	Engineering Probability and Statistics	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
	Complete 12 semester hours from the Restricted Elective List below.	12
	Complete 8 semester hours from the Other Elective List below.	8

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
	Complete 8 semester hours from the Restricted Elective List below.	8
	Complete 8 semester hours from the Other Elective List below.	8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
	Complete 8 semester hours from the Restricted Elective List below.	8
	Complete 4 semester hours from the Other Elective List below.	4

Course Lists

RESTRICTED ELECTIVE LIST

Code	Title	Hours
CIVE 6566	Sustainable Urban Transportation: Netherlands	
CIVE 7380	Performance Models and Simulation of Transportation Networks	
CIVE 7381	Transportation Demand Forecasting and Model Estimation	
CIVE 7385	Public Transportation	
CIVE 7387	Design Aspects of Roadway Safety	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
IE 7215	Simulation Analysis	
IE 7280	Statistical Methods in Engineering	

OTHER ELECTIVE LIST

Any restricted elective not used to meet the restricted elective requirement can be used as another elective. Courses outside this list may be taken as electives with advisor approval.

Code	Title	Hours
IE 7275	Data Mining in Engineering	
IE 7290	Reliability Analysis and Risk Assessment	
INFO 6210	Data Management and Database Design	
MATH 7343	Applied Statistics	
OR 6205	Deterministic Operations Research	
OR 7230	Probabilistic Operation Research	
OR 7245	Network Analysis and Advanced Optimization	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7231	Transportation Policy	
PPUA 7234	Land Use and Urban Growth Policy	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Environmental Engineering, MSENVE

This program integrates the study of physical, chemical, and biological processes and fundamental principles for water and wastewater treatment and disposal, hazardous waste management, surface water and groundwater quality, water resources management, and air quality management. Successful graduates will have the ability to develop and implement technologies for various environmental applications with the goal to improve and protect the environment and human health. It includes required core courses from the Department of Civil and Environmental Engineering (CEE), complemented by electives in civil and environmental engineering, mechanical and industrial engineering, earth and environmental sciences, and mathematics.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core electives	12 SH	12 SH	12 SH
Restricted electives	8 SH	8 SH	12 SH
Other electives	8 SH	4 SH	8 SH
Master of Science report/thesis	4 SH	8 SH	

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Environmental Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Environmental Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved environmental engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete three of the following:		12
CIVE 7250	Environmental Chemistry	
CIVE 7251	Environmental Biological Processes	
CIVE 7252	Water Engineering, Resources, and Energy Recovery	
CIVE 7255	Environmental Physical/Chemical Processes	
CIVE 7260	Hydrologic Modeling	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the Restricted Electives List below.		12
Complete 8 semester hours from the Other Electives List below.		8

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Restricted Electives List below.		8
Complete 8 semester hours from the Other Electives List below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 8 semester hours from the Restricted Electives List below.		8
Complete 4 semester hours from the Other Electives List below.		4

Course Lists

RESTRICTED ELECTIVES LIST

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
CIVE 5250	Organic Pollutants in the Environment	
CIVE 5260	Environmental Fluid Mechanics	
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5300	Environmental Engineering Laboratory	
CIVE 5536	Hydrologic Engineering	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 6777	Climate Hazards and Resilient Cities Abroad	
CIVE 6778	Climate Adaptation and Policy Abroad	
CIVE 7261	Surface Water Quality Modeling	
CIVE 7272	Air Quality Management	
CIVE 7392	Special Topics in Environmental Engineering (Hydraulic Modeling)	

OTHER ELECTIVES LIST

Any required core course not used to meet the required core course requirement can be taken as another elective. Any restricted elective not used to meet the restricted elective requirement can be taken as another elective.

Code	Title	Hours
EECE 7204	Applied Probability and Stochastic Processes	
ENVR 5190	Soil Science	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
EEMB 5516	Oceanography	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
IE 7290	Reliability Analysis and Risk Assessment	
MATH 7241	Probability 1	
MATH 7343	Applied Statistics	
MATH 7344	Regression, ANOVA, and Design	

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Sustainable Building Systems, MSSBS

The sustainable building systems program focuses on the design and operation of buildings to provide a comfortable, healthy, and productive indoor environment with minimal energy and environmental impact. Students have an opportunity to develop leadership and decision-making skills to implement sustainable building practices in either the private or public sectors in the global market.

The graduates of the **Master of Science in Sustainable Building Systems** program should display a high level of engineering knowledge in a broad range of architectural engineering, civil engineering, and construction management while embracing the concepts of engineering sustainability as related to energy and materials usage and the effects on the environment. Graduates will have the base training necessary to lead efforts within companies to plan and implement sustainable practices for the design and operation of buildings, realize energy and materials efficiency improvements, and minimize environmental impact. Upon graduation, students will have a theoretical background to the concepts behind the LEED (Leadership in Energy and Environmental Design) Green Associate examination.

Below is a typical course sequence for graduation in two semesters. The program is flexible to accommodate full-time students—who wish to proceed over a period of two to four semesters—and part-time students—who can complete the program requirements by taking one to two courses per semester, finishing the program in approximately four years.

Degree Requirements	Full-Time Study	Part-Time Study
Core courses	12	12
Restricted electives	8	8
Open elective	12	12

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Sustainable Building Systems with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Sustainable Building Systems in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved sustainable building systems technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ARCH 5210 and ARCH 5211	Environmental Systems and Recitation for ARCH 5210	4
SBSY 5100	Sustainable Design and Technologies in Construction	4
SBSY 5200	Sustainable Engineering Systems for Buildings	4

Electives

RESTRICTED ELECTIVE LIST

Code	Title	Hours
Complete 8 semester hours from the following:		8
ARCH 5220	Integrated Building Systems	
CIVE 5221	Construction Project Control and Organization	
CIVE 5231	Alternative Project Delivery Systems in Construction	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 7220 or EMGT 5220	Construction Management Engineering Project Management	
CIVE 7230	Legal Aspects of Civil Engineering	
EMGT 6305	Financial Management for Engineers	
SBSY 5300	Information Systems for Integrated Project Delivery	

OTHER ELECTIVE LIST

Any restricted elective not used to meet the restricted elective requirement can be taken as another elective.

Code	Title	Hours
Complete 12 semester hours from the following:		12
ACCT 6200	Financial Reporting and Managerial Decision Making 1	
ACCT 6201	Financial Reporting and Managerial Decision Making 2	
CIVE 7350	Behavior of Concrete Structures	
CIVE 7351	Behavior of Steel Structures	
FINA 6200	Value Creation through Financial Decision Making	

FINA 6216	Valuation and Value Creation
FINA 6217	Real Estate Finance and Investment
LPSC 7312	Cities, Sustainability, and Climate Change
ME 5645	Environmental Issues in Manufacturing and Product Use

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Electrical and Computer Engineering

Website (<http://www.ece.neu.edu>)

Srinivas Tadigadapa, PhD
Professor and Chair

Waleed Meleis, PhD
Associate Professor and Associate Chair

Masoud Salehi, PhD
Associate Professor and Director of Graduate Studies

409 Dana Research Center
617.373.7529
617.373.4431 (fax)

The Department of Electrical and Computer Engineering (ECE) graduate program offers a Master of Science in Electrical and Computer Engineering, a Master of Science in Electrical and Computer Engineering Leadership, a Doctor of Philosophy in Electrical Engineering, and a Doctor of Philosophy in Computer Engineering.

ECE's graduate program is a dynamic and thriving center of world-recognized research in a wide range of areas. The department has strong ties to local industry and the world-famous hospitals and medical centers of Boston and is involved in many joint research projects with them. With four NSF- and DHS-funded research centers and over 20 industrial partners, faculty and students are actively conducting cutting-edge research in areas such as computer vision; pattern recognition and machine learning; brain-computer interface; power systems and power electronics; underwater communication networks and signal processing; robotics; information theory; communications, control, and signal processing; RF, electromagnetics, optics, and magnetic materials; micro/nanomechanical structures and advanced nanomaterials; power-first system/computer architecture; internet-of-things; ultra-low power biomedical and neural circuits and systems.

ECE's graduate program educates MS and PhD students with deep fundamental and practical knowledge in the various disciplines of electrical and computer engineering by offering a strong curriculum and providing opportunities for research in these disciplines. The department educates the next generation of highly skilled engineers and researchers with necessary skills to address the future needs of industry, government, and humanity.

Mission of the Department

The primary educational missions of the electrical and computer engineering department are to educate undergraduate students so they have the opportunity to obtain successful careers in electrical and computer engineering and related disciplines, and pursue advanced study such as graduate study in engineering or related disciplines, and to

educate graduate students so they can make meaningful contributions to research and industry.

Overview of Programs Offered

ECE offers the following graduate degree programs:

- Master of Science in Electrical and Computer Engineering (MSECE)
- Master of Science in Electrical and Computer Engineering Leadership (MSECEL)
- Doctor of Philosophy in Computer Engineering (PhD)
- Doctor of Philosophy in Electrical Engineering (PhD)

All degrees can be pursued on either a full- or part-time basis consistent with residency requirements for the PhD degrees. The master's curriculum includes areas of concentration in the following:

1. Communications, Control, and Signal Processing (CCSP)
2. Computer Networks and Security (CNWS)
3. Computer Systems and Software (CSYS)
4. Computer Vision, Machine Learning, and Algorithms (CVLA)
5. Electromagnetics, Plasma, and Optics (ELPO)
6. Microsystems, Materials, and Devices (MSMD)
7. Power Systems (POWR)

MSECE students pursue their degree by selecting one of the two tracks—MSECE with thesis and course track (MST) or MSECE course-only track (MSC).

Electrical and Computer Engineering PhD Course Requirements

The student and his or her dissertation committee determine the program of study. A typical program comprises 24 semester hours of course work beyond the Master of Science degree. Students who enter the program with a bachelor's degree complete the curriculum for a Master of Science degree with an area of concentration. After that, as a minimum, the PhD program must include at least 16 semester hours of graduate course work beyond the Master of Science degree, at least 8 semester hours of which must be graduate-level ECE courses. Students who enter the program with a relevant and approved Master of Science degree complete a minimum of 16 semester hours of graduate course work, at least 8 semester hours of which must be graduate-level ECE courses. All students must achieve a minimum cumulative GPA of 3.000.

Master of Science Degree Requirements

Students must complete a minimum of 32 semester hours of approved course work with a minimum GPA of 3.000. MST track students must complete an 8-semester-hour thesis as part of their program of study. Full- and part-time students should follow the same curriculum requirements.

Students who select the MST track must form a thesis committee comprised of at least three members. The thesis committee must include the thesis advisor, and at least two members must be tenured or tenure-track ECE faculty. The student shall present the thesis to this committee and to the ECE department at-large in the form of a seminar before final approval of the thesis.

The ECE department requires the master's degree students who hold research assistantships to register full-time.

COURSE REQUIREMENTS FOR MSC STUDENTS

The program requires 32 semester hours of graduate-level courses. At least five of these courses must be from the list of "depth" courses in the student's concentration and at least two must be outside this list; these courses are known as "breadth" courses. None of these courses

can be from the list of “excluded courses.” For students in the computer-engineering-related concentrations— computer systems and software; computer networks and security; and computer vision, machine learning, and algorithms—at least 20 semester hours of the 32 required semester hours must be graduate-level ECE courses. For other concentrations, at least 24 semester hours of the 32 required semester hours must be graduate-level ECE courses. More details on MSC requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>).

COURSE REQUIREMENTS FOR MST STUDENTS

The program requires 24 semester hours of graduate-level courses. At least three of these courses must be from the list of “depth” courses in the student’s concentration and at least one must be outside this list; these courses are known as “breadth” courses. None of these courses can be from the list of “excluded courses.” At least 12 semester hours of the required 24 semester hours must be graduate-level ECE courses. In addition, the program requires 8 semester hours of Thesis (EECE 7990). More details on MST requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>).

Graduate Certificate Options

Students enrolled in a master’s degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Master of Science in Electrical and Computer Engineering Leadership (MSECEL) (p. 180) along with the Graduate Certificate in Engineering Leadership.

In addition, students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the Master of Science in Electrical and Computer Engineering. This option results in an increase in total hours beyond that required for the master’s degree only.

Programs

Doctor of Philosophy (PhD)

- Computer Engineering (p. 157)
- Computer Engineering—Advanced Entry (p. 158)
- Electrical Engineering (p. 159)
- Electrical Engineering—Advanced Entry (p. 160)

Master of Science (MS)

- Applied Physics and Engineering (p. 161)
- Data Science (p. 104)

Master of Science in Electrical and Computer Engineering (MSECE)

- Concentration in Communications, Control, and Signal Processing (p. 164)
- Concentration in Computer Systems and Software (p. 166)
- Concentration in Computer Networks and Security (p. 168)
- Concentration in Computer Vision, Machine Learning, and Algorithms (p. 171)
- Concentration in Electromagnetics, Plasma, and Optics (p. 173)
- Concentration in Microsystems, Materials, and Devices (p. 175)
- Concentration in Power Systems (p. 177)

Master of Science in Electrical and Computer Engineering Leadership (MSECEL)

- Electrical and Computer Engineering Leadership (p. 180)

Computer Engineering, PhD

The Doctor of Philosophy in Computer Engineering offers students an opportunity for study in a broad range of areas in computer engineering. Details on PhD requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>). A summary of requirements is given below.

Qualifying Exam and Degree Candidacy

The PhD qualifying exam is the examination for admissions to the doctoral programs in electrical engineering and in computer engineering. It is a written exam in the student’s major area, and some concentrations include an oral exam. The exam has the dual purposes of serving as an indicator of the student’s capability for successful completion of the PhD in electrical engineering or in computer engineering and of serving as a guide to the student’s advisor in developing a suitable plan of study, tailored to the individual needs of the student. Students are tested on graduate course material as specified by the faculty in the chosen area.

A student who has matriculated in the PhD program is considered a predoctoral student. Upon successful completion of the qualifying exam, the student is designated a PhD candidate. All predoctoral students who hold a master’s degree or its equivalent and who matriculate in a fall semester must take this exam in the spring semester of their first academic year of study. A student who fails the qualifying exam will be permitted to retake the exam only one more time.

Annual Review

PhD students are reviewed annually starting with their second year in the ECE department. Students complete a form and submit a one-page report of their progress during the past year. Each student is evaluated and receives a grade of satisfactory or unsatisfactory. Students who receive an unsatisfactory grade will meet with their advisor and the ECE department chair in order to receive feedback and set goals for the next year. Students who receive unsatisfactory grades in two consecutive years are terminated from the PhD program.

Residence Requirement

After reaching PhD candidacy, one year of full-time graduate work or two consecutive years of part-time graduate work satisfy the university residence requirement. In the latter case, the student’s advisor must approve a detailed schedule in order to ensure that the student devotes at least half of the time to the requirements of the Graduate School of Engineering.

Dissertation

Within one year of passing the PhD qualifying exam, the PhD candidate must form a dissertation committee. A dissertation committee must have at least three members. At least two of the committee members must be tenured or tenure-track Department of Electrical and Computer Engineering (ECE) faculty, and the committee must include the student’s advisor. The chair of the committee must be a tenured or tenure-track faculty member in the ECE department.

The dissertation committee must design an appropriate program of study that prepares the student to be a successful doctoral-level engineer as

well as direct the candidate's dissertation research. The dissertation committee will approve the dissertation in final form.

DISSERTATION AND DISSERTATION CONTINUATION REGISTRATION

Upon successful completion of the PhD qualifying exam and the required course work, the PhD candidate must register in two consecutive semesters for Dissertation (EECE 9990). Upon completion of this sequence, the student must register for Dissertation Continuation (EECE 9996) in every semester until the dissertation is completed. A student may not register for Continuation until he or she fulfills the two-semester sequence of Dissertation.

REGISTRATION REQUIREMENTS FOR PREDOCTORAL AND PHD CANDIDATE GRADUATE ASSISTANTS

The ECE department requires that predoctoral students and PhD candidates who hold research or teaching assistantships be registered full-time. Predoctoral PhD students may register for Research (EECE 9986) (zero credit, full-time equivalent) *if needed* to fulfill the registration requirement.

PHD PROPOSAL REVIEW

Each PhD candidate must demonstrate, by means of the proposal review, subject matter knowledge satisfactory for the award of the degree.

The proposal review is an oral presentation followed by a question-and-answer session administered by the student's dissertation advisor/committee. The proposal review will be given at the time the student submits his or her dissertation proposal to the dissertation advisor/committee for approval. As part of this exam, the dissertation advisor/committee will review the student's doctoral program and his or her performance in graduate courses, as well as examine the student on subject matter related to his or her graduate course work and dissertation subject area.

FINAL DISSERTATION DEFENSE

The final dissertation defense will include the subject matter of the dissertation and significant developments in the field of the dissertation work. Other related fields may be included if recommended by the examining faculty. The dissertation defense must be scheduled at least six months after the PhD proposal review.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual departmental review (each fall semester after the student has been in the program for at least one year)

Qualifying examination

Dissertation committee

Proposal stage review

Dissertation defense

Core Requirements

Complete 32 semester hours of approved course work—equivalent of MSECE degree. Then complete 16 semester hours, of which 8 must be graduate-level EECE courses. Consult faculty research advisor for acceptable courses.

Dissertation

Code	Title	Hours
EECE 9990	Dissertation	

Complete the following (repeatable) course twice:

Program Credit/GPA Requirements

48 total semester hours required

Minimum 3.000 GPA required

Computer Engineering, PhD—Advanced Entry

The PhD program in computer engineering offers students an opportunity for study in a broad range of areas in computer engineering. Details on PhD requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>). A summary of requirements is given below.

Qualifying Exam and Degree Candidacy

The PhD qualifying exam is the examination for admissions to the doctoral programs in electrical engineering and in computer engineering. It is a written exam in the student's major area, and some concentrations include an oral exam. The exam has the dual purposes of serving as an indicator of the student's capability for successful completion of the PhD in electrical engineering or in computer engineering and of serving as a guide to the student's advisor in developing a suitable plan of study, tailored to the individual needs of the student. Students are tested on graduate course material as specified by the faculty in the chosen area.

A student who has matriculated in the PhD program is considered a predoctoral student. Upon successful completion of the qualifying exam, the student is designated a PhD candidate. All predoctoral students who hold a master's degree or its equivalent and who matriculate in a fall semester must take this exam in the spring semester of their first academic year of study. A student who fails the qualifying exam will be permitted to retake the exam only one more time.

Annual Review

PhD students are reviewed annually starting with their second year in the ECE department. Students complete a form and submit a one-page report of their progress during the past year. Each student is evaluated and receives a grade of satisfactory or unsatisfactory. Students who receive an unsatisfactory grade will meet with their advisor and the ECE department chair in order to receive feedback and set goals for the next year. Students who receive unsatisfactory grades in two consecutive years are terminated from the PhD program.

Residence Requirement

After reaching PhD candidacy, one year of full-time graduate work or two consecutive years of part-time graduate work satisfy the university residence requirement. In the latter case, the student's advisor must approve a detailed schedule in order to ensure that the student devotes at least half of the time to the requirements of the Graduate School of Engineering.

Dissertation

Within one year of passing the PhD qualifying exam, the PhD candidate must form a dissertation committee. A dissertation committee must have at least three members. At least two of the committee members must be tenured or tenure-track Department of Electrical and Computer Engineering (ECE) faculty and the committee must include the student's advisor. The chair of the committee must be a tenured or tenure-track faculty member in the ECE department.

The dissertation committee must design an appropriate program of study that prepares the student to be a successful doctoral-level engineer as

well as direct the candidate's dissertation research. The dissertation committee will approve the dissertation in final form.

DISSERTATION AND DISSERTATION CONTINUATION REGISTRATION

Upon successful completion of the PhD qualifying exam and the required course work, the PhD candidate must register in two consecutive semesters for Dissertation (EECE 9990). Upon completion of this sequence, the student must register for Dissertation Continuation (EECE 9996) in every semester until the dissertation is completed. A student may not register for Continuation until he or she fulfills the two-semester sequence of Dissertation.

REGISTRATION REQUIREMENTS FOR PREDOCTORAL AND PHD CANDIDATE GRADUATE ASSISTANTS

The ECE department requires that predoctoral students and PhD candidates who hold research or teaching assistantships be registered full-time. Predoctoral PhD students may register for Research (EECE 9986) (zero credit, full-time equivalent) *if needed* to fulfill the registration requirement.

PHD PROPOSAL REVIEW

Each PhD candidate must demonstrate, by means of the proposal review, subject matter knowledge satisfactory for the award of the degree.

The proposal review is an oral presentation followed by a question-and-answer session administered by the student's dissertation advisor/committee. The proposal review will be given at the time the student submits his or her dissertation proposal to the dissertation advisor/committee for approval. As part of this exam, the dissertation advisor/committee will review the student's doctoral program and his or her performance in graduate courses, as well as examine the student on subject matter related to his or her graduate course work and dissertation subject area.

FINAL DISSERTATION DEFENSE

The final dissertation defense will include the subject matter of the dissertation and significant developments in the field of the dissertation work. Other related fields may be included if recommended by the examining faculty. The dissertation defense must be scheduled at least six months after the PhD proposal review.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review (each fall semester after the student has been in the program for at least one year)
Qualifying examination
Dissertation committee
Proposal stage review
Dissertation defense

Core Requirements

Complete 16 semester hours of approved course work. At least 8 semester hours must be graduate-level EECE courses. Consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
EECE 9990	Dissertation	

Program Credit/GPA Requirements

16 total semester hours required

Minimum 3.000 GPA required

Electrical Engineering, PhD

The PhD program in electrical engineering offers students an opportunity for study in a broad range of areas in electrical engineering. Details on PhD requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>). A summary of requirements is given below.

Qualifying Exam and Degree Candidacy

The PhD qualifying exam is the examination for admissions to the doctoral programs in electrical engineering and in computer engineering. It is a written exam in the student's major area, and some concentrations include an oral exam. The exam has the dual purposes of serving as an indicator of the student's capability for successful completion of the PhD in electrical engineering or in computer engineering and of serving as a guide to the student's advisor in developing a suitable plan of study, tailored to the individual needs of the student. Students are tested on graduate course material as specified by the faculty in the chosen area.

A student who has matriculated in the PhD program is considered a predoctoral student. Upon successful completion of the qualifying exam, the student is designated a PhD candidate. All predoctoral students who hold a master's degree or its equivalent and who matriculate in a fall semester must take this exam in the spring semester of their first academic year of study. A student who fails the qualifying exam will be permitted to retake the exam only one more time.

Annual Review

PhD students are reviewed annually starting with their second year in the ECE department. Students complete a form and submit a one-page report of their progress during the past year. Each student is evaluated and receives a grade of satisfactory or unsatisfactory. Students who receive an unsatisfactory grade will meet with their advisor and the ECE department chair in order to receive feedback and set goals for the next year. Students who receive unsatisfactory grades in two consecutive years are terminated from the PhD program.

Residence Requirement

After reaching PhD candidacy, one year of full-time graduate work or two consecutive years of part-time graduate work satisfy the university residence requirement. In the latter case, the student's advisor must approve a detailed schedule in order to ensure that the student devotes at least half of the time to the requirements of the Graduate School of Engineering.

Dissertation

Within one year of passing the PhD qualifying exam, the PhD candidate must form a dissertation committee. A dissertation committee must have at least three members. At least two of the committee members must be tenured or tenure-track Department of Electrical and Computer Engineering (ECE) faculty and the committee must include the student's advisor. The chair of the committee must be a tenured or tenure-track faculty member in the ECE department.

The dissertation committee must design an appropriate program of study that prepares the student to be a successful doctoral-level engineer as well as direct the candidate's dissertation research. The dissertation committee will approve the dissertation in final form.

DISSERTATION AND DISSERTATION CONTINUATION REGISTRATION

Upon successful completion of the PhD qualifying exam and the required course work, the PhD candidate must register in two consecutive semesters for Dissertation (EECE 9990). Upon completion of this sequence, the student must register for Dissertation (EECE 9990) in every semester until the dissertation is completed. A student may not register for Continuation until he or she fulfills the two-semester sequence of Dissertation.

REGISTRATION REQUIREMENTS FOR PREDOCTORAL AND PHD CANDIDATE GRADUATE ASSISTANTS

The ECE department requires that predoctoral students and PhD candidates who hold research or teaching assistantships be registered full-time. Predoctoral PhD students may register for Research (EECE 9986) (zero credit, full-time equivalent) if needed to fulfill the registration requirement.

PHD PROPOSAL REVIEW

Each PhD candidate must demonstrate, by means of the proposal review, subject matter knowledge satisfactory for the award of the degree.

The proposal review is an oral presentation followed by a question-and-answer session administered by the student's dissertation advisor/committee. The proposal review will be given at the time the student submits his or her dissertation proposal to the dissertation advisor/committee for approval. As part of this exam, the dissertation advisor/committee will review the student's doctoral program and his or her performance in graduate courses, as well as examine the student on subject matter related to his or her graduate course work and dissertation subject area.

FINAL DISSERTATION DEFENSE

The final dissertation defense will include the subject matter of the dissertation and significant developments in the field of the dissertation work. Other related fields may be included if recommended by the examining faculty. The dissertation defense must be scheduled at least six months after the PhD proposal review.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review (each fall semester after the student has been in the program for at least one year)
Qualifying examination
Dissertation committee
Proposal stage review
Dissertation defense

Core Requirements

Complete 32 semester hours of approved course work—equivalent of MSECE degree. Then complete 16 semester hours, of which 8 must be graduate-level EECE courses. Consult your faculty research advisor for acceptable courses.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
EECE 9990	Dissertation	

Program Credit/GPA Requirements

48 total semester hours required
Minimum 3.000 GPA required

Electrical Engineering, PhD—Advanced Entry

The PhD program in electrical engineering offers students the opportunity for study in a broad range of areas in electrical engineering. Details on PhD requirements can be found in the *Graduate Program Guide* (<http://www.ece.neu.edu/sites/default/files/pdfs/ece/ecegraduateprogramguide-2018-19.pdf>). A summary of requirements is given below.

Qualifying Exam and Degree Candidacy

The PhD qualifying exam is the examination for admissions to the doctoral programs in electrical engineering and in computer engineering. It is a written exam in the student's major area, and some concentrations include an oral exam. The exam has the dual purposes of serving as an indicator of the student's capability for successful completion of the PhD in electrical engineering or in computer engineering and of serving as a guide to the student's advisor in developing a suitable plan of study, tailored to the individual needs of the student. Students are tested on graduate course material as specified by the faculty in the chosen area.

A student who has matriculated in the PhD program is considered a predoctoral student. Upon successful completion of the qualifying exam, the student is designated a PhD candidate. All predoctoral students who hold a master's degree or its equivalent and who matriculate in a fall semester must take this exam in the spring semester of their first academic year of study. A student who fails the qualifying exam will be permitted to retake the exam only one more time.

Annual Review

PhD students are reviewed annually starting with their second year in the ECE department. Students complete a form and submit a one-page report of their progress during the past year. Each student is evaluated and receives a grade of satisfactory or unsatisfactory. Students who receive an unsatisfactory grade will meet with their advisor and the ECE department chair in order to receive feedback and set goals for the next year. Students who receive unsatisfactory grades in two consecutive years are terminated from the PhD program.

Residence Requirement

After reaching PhD candidacy, one year of full-time graduate work or two consecutive years of part-time graduate work satisfy the university residence requirement. In the latter case, the student's advisor must approve a detailed schedule in order to ensure that the student devotes at least half of the time to the requirements of the Graduate School of Engineering.

Dissertation

Within one year of passing the PhD qualifying exam, the PhD candidate must form a dissertation committee. A dissertation committee must have at least three members. At least two of the committee members must be tenured or tenure-track Department of Electrical and Computer Engineering (ECE) faculty and the committee must include the student's advisor. The chair of the committee must be a tenured or tenure-track faculty member in the ECE department.

The dissertation committee must design an appropriate program of study that prepares the student to be a successful doctoral-level engineer as well as direct the candidate's dissertation research. The dissertation committee will approve the dissertation in final form.

DISSERTATION AND DISSERTATION CONTINUATION REGISTRATION

Upon successful completion of the PhD qualifying exam and the required course work, the PhD candidate must register in two consecutive

semesters for Dissertation (EECE 9990). Upon completion of this sequence, the student must register for Dissertation Continuation (EECE 9996) in every semester until the dissertation is completed. A student may not register for Continuation until he or she fulfills the two-semester sequence of Dissertation.

REGISTRATION REQUIREMENTS FOR PREDOCTORAL AND PHD CANDIDATE GRADUATE ASSISTANTS

The ECE department requires that predoctoral students and PhD candidates who hold research or teaching assistantships be registered full-time. Predoctoral PhD students may register for Research (EECE 9986) (zero credit, full-time equivalent) if needed to fulfill the registration requirement.

PHD PROPOSAL REVIEW

Each PhD candidate must demonstrate, by means of the proposal review, subject matter knowledge satisfactory for the award of the degree.

The proposal review is an oral presentation followed by a question-and-answer session administered by the student's dissertation advisor/committee. The proposal review will be given at the time the student submits his or her dissertation proposal to the dissertation advisor/committee for approval. As part of this exam, the dissertation advisor/committee will review the student's doctoral program and his or her performance in graduate courses, as well as examine the student on subject matter related to his or her graduate course work and dissertation subject area.

FINAL DISSERTATION DEFENSE

The final dissertation defense will include the subject matter of the dissertation and significant developments in the field of the dissertation work. Other related fields may be included if recommended by the examining faculty. The dissertation defense must be scheduled at least six months after the PhD proposal review.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review (each fall semester after the student has been in the program for at least one year)
 Qualifying examination
 Dissertation committee
 Proposal stage review
 Dissertation defense

Core Requirements

Complete 16 semester hours of approved course work. At least 8 semester hours must be graduate-level EECE courses. Consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
EECE 9990	Dissertation	

Program Credit/GPA Requirements

16 total semester hours required
 Minimum 3.000 GPA required

Applied Physics and Engineering, MS

The combined MS program in applied physics and engineering allows graduate students to receive training in one of three concentrations of the electrical and computer engineering department while also receiving fundamental graduate-level physics training that is relevant to that area.

Thesis Option

A student may complete an additional 8 semester hours of thesis. Students may register for an additional two semesters of thesis work, Thesis (EECE 7990) (4 semester hours) or Thesis (PHYS 7990) (4 semester hours), depending on the affiliation of the thesis advisor. A thesis committee is composed of an advisor and two faculty members from physics or electrical engineering.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Concentrations

Complete one of the following concentrations:

- Microsystems, Materials, and Devices (p. 161)
- Electromagnetics, Plasma, and Optics (p. 162)
- Analysis, Modeling, and Computation (p. 162)

MICROSYSTEMS, MATERIALS, AND DEVICES

Code	Title	Hours
Core Courses		
EECE 7201	Solid State Devices	4
PHYS 7324	Condensed Matter Physics	4
Engineering Course Work		
Complete 12 semester hours from the following:		12
EECE 5606	Micro- and Nanofabrication	
EECE 5680	Electric Drives	
EECE 7204	Applied Probability and Stochastic Processes	
EECE 7240	Analog Integrated Circuit Design	
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication	
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)	
EECE 7245	Microwave Circuit Design for Wireless Communication	
EECE 7353	VLSI Design	
EECE 7398	Special Topics	
Physics Course Work		
Complete 12 semester hours from the following:		12
PHYS 5318	Principles of Experimental Physics	
PHYS 7301	Classical Mechanics/Math Methods	
PHYS 7302	Electromagnetic Theory	
PHYS 7305	Statistical Physics	
PHYS 7315	Quantum Theory 1	
PHYS 7316	Quantum Theory 2	
PHYS 7321	Computational Physics	

PHYS 7331	Network Science Data	
PHYS 7734	Topics: Condensed Matter Physics	

ELECTROMAGNETICS, PLASMA, AND OPTICS

Code	Title	Hours
Core Courses		
EECE 7203	Complex Variable Theory and Differential Equations	4
PHYS 7302	Electromagnetic Theory	4
Engineering Course Work		
Complete 12 semester hours from the following:		12
EECE 5648	Biomedical Optics	
EECE 5698	Special Topics in Electrical and Computer Engineering (Subsurface Imaging)	
EECE 7105	Optics for Engineers	
EECE 7202	Electromagnetic Theory 1	
EECE 7245	Microwave Circuit Design for Wireless Communication	
EECE 7270	Electromagnetic Theory 2	
EECE 7271	Computational Methods in Electromagnetics	
EECE 7275	Antennas and Radiation	
EECE 7293	Modern Imaging	

Physics Course Work

Complete 12 semester hours from the following:		12
PHYS 5318	Principles of Experimental Physics	
PHYS 7305	Statistical Physics	
PHYS 7315	Quantum Theory 1	
PHYS 7316	Quantum Theory 2	
PHYS 7321	Computational Physics	
PHYS 7324	Condensed Matter Physics	
PHYS 7731	Biological Physics 1	

ANALYSIS, MODELING, AND COMPUTATION

Code	Title	Hours
Core Courses		
EECE 7205	Fundamentals of Computer Engineering	4
PHYS 7321	Computational Physics	4
Engineering Course Work		
Complete 12 semester hours from the following:		12
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 5642	Data Visualization	
EECE 5643	Simulation and Performance Evaluation	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 7205	Fundamentals of Computer Engineering	
EECE 7271	Computational Methods in Electromagnetics	
EECE 7352	Computer Architecture	
EECE 7353	VLSI Design	
EECE 7360	Combinatorial Optimization	
EECE 7374	Fundamentals of Computer Networks	
EECE 7376	Operating Systems: Interface and Implementation	

Physics Course Work

Complete 12 semester hours from the following:		12
PHYS 5116	Complex Networks and Applications	
PHYS 5318	Principles of Experimental Physics	
PHYS 7301	Classical Mechanics/Math Methods	
PHYS 7305	Statistical Physics	
PHYS 7331	Network Science Data	
PHYS 7335	Dynamical Processes in Complex Networks	

Thesis Option

Students may register for an additional two semesters of thesis work, Thesis (EECE 7990) or Thesis (PHYS 7990), depending on the affiliation of the thesis advisor. Thesis credits cannot be substituted for any of the course work listed above. This option requires a total of 40 semester hours for the master's degree.

Program Credit/GPA Requirements

32–40 total semester hours required
Minimum 3.000 GPA required

Data Science, MS

The College of Computer and Information Science (CCIS) and the Department of Electrical and Computer Engineering (ECE) jointly offer a new interdisciplinary Master of Science program in data science. This program is designed to give students a comprehensive framework for processing, analyzing, modeling, and reasoning about data. Students will engage in an extensive course work intended to develop depth in data collection, storage, retrieval, processing, modeling, and visualization. Students will also be able to choose elective courses from a variety of offerings in CCIS, the College of Engineering (COE), and throughout the campus to explore areas that generate data, or specialized data science applications. Successful program graduates will be well positioned to attain data scientist and data engineer positions in a fast-growing field or to progress into doctoral degrees in related disciplines.

Course Requirements

The Master of Science in Data Science curriculum requires five core courses that jointly represent the essential technical skills in data science. Two courses in algorithms and data processing examine foundational concepts and languages, focusing on data representation, storage, manipulation, and query, as well as large-scale computing and optimization. Two core courses in machine learning and data mining introduce concepts on data modeling, representation, uncovering associations, and making predictions. The capstone course presents a holistic view of data science. Through experiential learning, students are exposed to the real-world challenges of implementing data science techniques to solve meaningful problems and effectively communicate with data. The courses are tailored toward technically or mathematically trained students.

The five core courses include:

- Two core courses in algorithms and data processing
- Two core courses in machine learning and data mining
- One core course in information visualization

Three elective courses are drawn from a selection of courses across Northeastern.

Learning Outcomes

Students who complete the MS degree will be able to:

- Collect data from numerous sources (databases, files, XML, JSON, CSV, and Web APIs) and integrate them into a form in which the data is fit for analysis
- Use R and Python to explore data, produce summary statistics, perform statistical analyses; use standard data mining and machine-learning models for effective analysis
- Select, plan, and implement storage, search, and retrieval components of large-scale structure and unstructured repositories
- Retrieve data for analysis, which requires knowledge of standard retrieval mechanisms such as SQL and XPath, but also retrieval of unstructured information such as text, image, and a variety of alternate formats
- Match the methodological principles and limitations of machine learning and data mining methods to specific applied problems and communicate the applicability and the advantages/disadvantages of the methods in the specific problem to nondata experts
- Carry out the full data analysis workflow, including unsupervised class discovery, supervised class comparison, and supervised class prediction; Summarize, interpret, and communicate the analysis of results
- Organize visualization of data for analysis, understanding, and communication; choose appropriate visualization method for a given data type using effective design and human perception principle
- Develop methods for modeling, analyzing, and reasoning about data arising in one or more application domains such as social science, health informatics, web and social media, climate informatics, urban informatics, geographical information systems, business analytics, bioinformatics, complex networks, public health, and game design
- Manage, process, analyze, and visualize data at scale. This outcome allows students to handle data where the conventional information technology fail.

Placement Exams

Each incoming masters student, regardless of his or her background, takes two placement exams administered one week prior to the beginning of the semester. The two exams cover fundamentals of computer science and programming skills and basic statistics, probability, and linear algebra. If the student does not get a B or above in a part of the placement exam, then the student must take the corresponding introductory course.

- Introduction to Programming for Data Science (DS 5010) The introductory course on fundamentals of programming and data structures covers data structures (lists, arrays, trees, hash tables, etc.), program design, programming practices, testing, debugging, maintainability, data collection techniques, and data cleaning and preprocessing. This course will have a class project where the students will use the concepts they learn to collect data from the web, clean, and preprocess and ready for analysis.
- Introduction to Linear Algebra and Probability for Data Science (DS 5020) The introductory course on basics of statistics, probability, and linear algebra covers random variables, frequency distributions, measures of central tendency, measures of dispersion, moments of a distribution, discrete and continuous probability distributions, chain rule, Bayes' rule, correlation theory, basic sampling, matrix operations, trace of a matrix, norms, linear independence and ranks, inverse of a matrix, orthogonal matrices, range and null space of a matrix, the

determinant of a matrix, positive semidefinite matrices, eigenvalues and eigenvectors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative GPA of 3.000 or higher is required in the following core courses:

Code	Title	Hours
Algorithms		
Complete 4 semester hours from the following:		4
CS 5800	Algorithms	
EECE 7205	Fundamentals of Computer Engineering	
Data Management and Processing		
DS 5110	Introduction to Data Management and Processing	4
Machine Learning and Data Mining		
DS 5220	Supervised Machine Learning and Learning Theory	4
DS 5230	Unsupervised Machine Learning and Data Mining	4
Presentation and Visualization		
DS 5500	Information Visualization: Applications in Data Science	4

Electives

Code	Title	Hours
Complete 12 semester hours from the following:		12
College of Computer and Information Science		
CS 5100	Foundations of Artificial Intelligence	
CS 6120	Natural Language Processing	
CS 6200	Information Retrieval	
CS 6350	Empirical Research Methods	
CS 7180	Special Topics in Artificial Intelligence	
CS 7280	Special Topics in Database Management	

College of Engineering

CIVE 7388	Special Topics in Civil Engineering	
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 7337	Information Theory	
EECE 7360	Combinatorial Optimization	
EECE 7370	Advanced Computer Vision	
EECE 7397	Advanced Machine Learning	
IE 5640	Data Mining for Engineering Applications	
IE 7275	Data Mining in Engineering	
IE 7280	Statistical Methods in Engineering	

College of Social Sciences and Humanities

PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	

PPUA 5266	Urban Theory and Science
PPUA 7237	Advanced Spatial Analysis of Urban Systems
POLS 7200	Perspectives on Social Science Inquiry
POLS 7201	Research Design
POLS 7202	Quantitative Techniques

D'Amore-McKim School of Business

BUSN 6320	Business Analytics Fundamentals
BUSN 6324	Predictive Analytics for Managers

College of Science

MATH 7340	Statistics for Bioinformatics
PHYS 5116	Complex Networks and Applications
PHYS 7305	Statistical Physics
PHYS 7321	Computational Physics
PHYS 7331	Network Science Data

Bouvé College of Health Sciences

NRSB 5121	Epidemiology and Population Health
PHTH 5202	Introduction to Epidemiology
PHTH 5210	Biostatistics in Public Health
PHTH 5224	Social Epidemiology

College of Arts, Media and Design

GSND 5110	Game Design and Analysis
GSND 6350	Data-Driven Player Modeling

Note: Students that take electives worth less than 4 credits (i.e., Bouvé, CSSH courses) will register for an accompanying data science project course in the same semester to bring the cumulative credits to 4. In order to earn this additional credit, students will be expected to work with faculty to design an additional project in line with the curricular aims of their chosen elective and the data science core learning outcomes.

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Communications, Control, and Signal Processing, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program**. Please do not petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with a Concentration in Communications, Control, and Signal Processing with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Electrical and Computer Engineering with a Concentration in Communications, Control, and Signal Processing in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved communications, control, and signal processing technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
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Depth Courses

Complete 20 semester hours from the depth course list below. (p. 164)	20
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Breadth Courses

Complete 8 semester hours from the breadth course list below. (p. 165)	8
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Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 additional semester hours from either the depth or breadth course lists below.	4
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THESIS OPTION

Code	Title	Hours
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Thesis

EECE 7990	Thesis	8
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Depth Courses

Complete 12 semester hours from the depth course list below. (p. 164)	12
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Breadth Courses

Complete 4 semester hours from the breadth course list below. (p. 165)	4
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Note: Depth courses cannot be taken for breadth.

Elective

Complete 8 additional semester hours from either the depth or breadth course lists below.	8
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Course Lists**DEPTH COURSES**

Code	Title	Hours
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EECE 5550 Mobile Robotics

EECE 5552 Assistive Robotics

EECE 5576 Wireless Communication Systems

EECE 5580 Classical Control Systems

EECE 5610	Digital Control Systems
EECE 5664	Biomedical Signal Processing
EECE 5666	Digital Signal Processing
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)
EECE 7200	Linear Systems Analysis
EECE 7204	Applied Probability and Stochastic Processes
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7263	Humanoid Robotics
EECE 7310	Modern Signal Processing
EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7336	Digital Communications
EECE 7337	Information Theory
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 7346	Probabilistic System Modeling and Analysis
EECE 7400	Special Problems in Electrical Engineering

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5161	Thin Film Technologies	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5554	Robotics Sensing and Navigation (Robotics Sensing and Navigation)	
EECE 5606	Micro- and Nanofabrication	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 5642	Data Visualization	
EECE 5643	Simulation and Performance Evaluation	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5647	Nanophotonics	
EECE 5648	Biomedical Optics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	

EECE 5652	Microwave Circuits and Networks
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680
EECE 5682	Power Systems Analysis 1
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684
EECE 5686	Electrical Machines
EECE 5688	Analysis of Unbalanced Power Grids
EECE 5697	Acoustics and Sensing
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)
EECE 7105	Optics for Engineers
EECE 7150	Autonomous Field Robotics
EECE 7201	Solid State Devices
EECE 7202	Electromagnetic Theory 1
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7205	Fundamentals of Computer Engineering
EECE 7224	Power Systems State Estimation
EECE 7226	Modeling and Simulation of Power System Transients
EECE 7228	Advanced Power Electronics (Advanced Power Electronics)
EECE 7237	Special Topics in Power Electronics
EECE 7240	Analog Integrated Circuit Design
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)
EECE 7245	Microwave Circuit Design for Wireless Communication
EECE 7250	Power Management Integrated Circuits
EECE 7258	Human Sensing and Recognition (Human Centered Computing -- former Special Topics)
EECE 7270	Electromagnetic Theory 2
EECE 7271	Computational Methods in Electromagnetics
EECE 7275	Antennas and Radiation
EECE 7293	Modern Imaging
EECE 7296	Electronic Materials
EECE 7297	Advanced Magnetic Materials--Magnetic Devices
EECE 7298	Magnetic Materials--Fundamentals and Measurements
EECE 7352	Computer Architecture

EECE 7353	VLSI Design
EECE 7360	Combinatorial Optimization
EECE 7364	Mobile and Wireless Networking
EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7370	Advanced Computer Vision
EECE 7374	Fundamentals of Computer Networks
EECE 7376	Operating Systems: Interface and Implementation
EECE 7377	Scalable and Sustainable System Design (Scalable and Sustainable System Design)
EECE 7390	Computer Hardware Security
EECE 7397	Advanced Machine Learning
EECE 7398	Special Topics (Compilers)
EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
MATH 7233	Graph Theory
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5600	Computer Systems
CS 5770	Software Vulnerabilities and Security
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
Courses from the following subject areas may not count toward any concentration within the MSECE program:		
CSYE, ENSY, EMGT, INFO, SBSY, TELE		
The following CS courses may not count toward any concentration within the MSECE program:		
CS 5010	Programming Design Paradigm	
CS 5320		
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
CS 5700	Fundamentals of Computer Networking	
CS 5800	Algorithms	

CS 6350	Empirical Research Methods
CS 6710	Wireless Network

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Computer Systems and Software, MSECE

The master's degree programs in electrical and computer engineering offer in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on groundbreaking research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program**. Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with Concentration in Computer Systems and Software with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science degree in Electrical and Computer Engineering with Concentration in Computer Systems and Software in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved computer systems and software technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Depth Courses		
Complete 20 semester hours from the depth course list below. (p. 167)		20
Breadth Courses		

Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 167) 8

Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 semester hours of either depth or breadth courses. 4

THESIS OPTION

Code	Title	Hours
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Depth Courses

Complete 12 semester hours from the depth course list below. (p. 167)	12
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Breadth Courses

Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 167)	8
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Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 additional semester hours from either depth or breadth courses.	4
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Thesis

EECE 7990	Thesis	8
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Course Lists

DEPTH COURSES

Code	Title	Hours
EECE 5552	Assistive Robotics (Principles of Assistive Robotics)	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5640	High-Performance Computing	
EECE 5643	Simulation and Performance Evaluation	
EECE 7205	Fundamentals of Computer Engineering	
EECE 7352	Computer Architecture	
EECE 7353	VLSI Design	
EECE 7368	High-Level Design of Hardware-Software Systems	
EECE 7376	Operating Systems: Interface and Implementation	
EECE 7377	Scalable and Sustainable System Design (Scalable and Sustainable System Design)	
EECE 7390	Computer Hardware Security	
EECE 7398	Special Topics (Compilers)	
EECE 7398	Special Topics (Advanced Computer Architecture)	
EECE 7400	Special Problems in Electrical Engineering	
CS 5200	Database Management Systems	
CS 5600	Computer Systems	
CS 6410	Compilers	
CS 6510	Advanced Software Development	

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5161	Thin Film Technologies	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5550	Mobile Robotics	
EECE 5554	Robotics Sensing and Navigation	
EECE 5576	Wireless Communication Systems	
EECE 5580	Classical Control Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5610	Digital Control Systems	
EECE 5639	Computer Vision	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5647	Nanophotonics	
EECE 5648	Biomedical Optics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	
EECE 5652	Microwave Circuits and Networks	
EECE 5664	Biomedical Signal Processing	
EECE 5666	Digital Signal Processing	
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680	
EECE 5682	Power Systems Analysis 1	
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684	
EECE 5686	Electrical Machines	
EECE 5688	Analysis of Unbalanced Power Grids	
EECE 5697	Acoustics and Sensing	
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)	
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)	
EECE 7105	Optics for Engineers	
EECE 7150	Autonomous Field Robotics	
EECE 7200	Linear Systems Analysis	
EECE 7201	Solid State Devices	

EECE 7202	Electromagnetic Theory 1
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7204	Applied Probability and Stochastic Processes
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7224	Power Systems State Estimation
EECE 7226	Modeling and Simulation of Power System Transients
EECE 7228	Advanced Power Electronics
EECE 7237	Special Topics in Power Electronics
EECE 7240	Analog Integrated Circuit Design
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)
EECE 7245	Microwave Circuit Design for Wireless Communication
EECE 7250	Power Management Integrated Circuits
EECE 7258	Human Sensing and Recognition
EECE 7263	Humanoid Robotics
EECE 7270	Electromagnetic Theory 2
EECE 7271	Computational Methods in Electromagnetics
EECE 7275	Antennas and Radiation
EECE 7293	Modern Imaging
EECE 7296	Electronic Materials
EECE 7297	Advanced Magnetic Materials—Magnetic Devices
EECE 7298	Magnetic Materials—Fundamentals and Measurements
EECE 7310	Modern Signal Processing
EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7336	Digital Communications
EECE 7337	Information Theory
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 7346	Probabilistic System Modeling and Analysis
EECE 7360	Combinatorial Optimization
EECE 7364	Mobile and Wireless Networking
EECE 7370	Advanced Computer Vision
EECE 7374	Fundamentals of Computer Networks
EECE 7397	Advanced Machine Learning
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials

ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
MATH 7233	Graph Theory
CS 5100	Foundations of Artificial Intelligence
CS 5770	Software Vulnerabilities and Security
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
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Courses from the following subject areas may not count toward any concentration within the MSECE program:

CSYE, ENSY, EMGT, INFO, SBSY, TELE

The following CS courses may not count toward any concentration within the MSECE program:

CS 5010	Programming Design Paradigm
CS 5320	
CS 5330	Pattern Recognition and Computer Vision
CS 5340	Computer/Human Interaction
CS 5520	Mobile Application Development
CS 5610	Web Development
CS 5700	Fundamentals of Computer Networking
CS 5800	Algorithms
CS 6350	Empirical Research Methods
CS 6710	Wireless Network

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Computer Networks and Security, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program**. Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in

addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with Concentration in Computer Networks and Security with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Electrical and Computer Engineering with Concentration in Computer Networks and Security in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved computer networks and security technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Depth Courses		
Complete 20 semester hours from the depth course list below. (p. 169)		20
Breadth Courses		
Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 169)		8

Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 semester hours of either depth or breadth courses.	4
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THESIS OPTION

Code	Title	Hours
Depth Courses		
Complete 12 semester hours from the depth course list below. (p. 169)		12
Breadth Courses		
Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 169)		8

Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 additional semester hours of either depth or breadth courses.	4
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Thesis

EECE 7990	Thesis	8
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Course Lists

DEPTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5576	Wireless Communication Systems	
EECE 5640	High-Performance Computing	
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)	
EECE 7204	Applied Probability and Stochastic Processes	
EECE 7205	Fundamentals of Computer Engineering	
EECE 7346	Probabilistic System Modeling and Analysis	
EECE 7364	Mobile and Wireless Networking	
EECE 7374	Fundamentals of Computer Networks	
EECE 7390	Computer Hardware Security	
EECE 7393		
EECE 7400	Special Problems in Electrical Engineering	
CS 5770	Software Vulnerabilities and Security	
CS 6740	Network Security	
CS 6750	Cryptography and Communications Security	
CS 6760	Privacy, Security, and Usability	

BREADTH COURSES

Code	Title	Hours
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5552	Assistive Robotics	
EECE 5554	Robotics Sensing and Navigation	
EECE 5580	Classical Control Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5610	Digital Control Systems	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5639	Computer Vision	
EECE 5642	Data Visualization	
EECE 5643	Simulation and Performance Evaluation	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5647	Nanophotonics	
EECE 5648	Biomedical Optics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	
EECE 5664	Biomedical Signal Processing	

EECE 5666	Digital Signal Processing
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680
EECE 5682	Power Systems Analysis 1
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684
EECE 5686	Electrical Machines
EECE 5688	Analysis of Unbalanced Power Grids
EECE 5697	Acoustics and Sensing
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)
EECE 7105	Optics for Engineers
EECE 7150	Autonomous Field Robotics
EECE 7200	Linear Systems Analysis
EECE 7263	Humanoid Robotics
EECE 7201	Solid State Devices
EECE 7202	Electromagnetic Theory 1
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7224	Power Systems State Estimation
EECE 7226	Modeling and Simulation of Power System Transients
EECE 7228	Advanced Power Electronics
EECE 7237	Special Topics in Power Electronics
EECE 7240	Analog Integrated Circuit Design
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)
EECE 7245	Microwave Circuit Design for Wireless Communication
EECE 7258	Human Sensing and Recognition
EECE 7270	Electromagnetic Theory 2
EECE 7271	Computational Methods in Electromagnetics
EECE 7275	Antennas and Radiation
EECE 7293	Modern Imaging
EECE 7296	Electronic Materials
EECE 7297	Advanced Magnetic Materials—Magnetic Devices
EECE 7298	Magnetic Materials—Fundamentals and Measurements
EECE 7310	Modern Signal Processing

EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7336	Digital Communications
EECE 7337	Information Theory
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 7352	Computer Architecture
EECE 7353	VLSI Design
EECE 7360	Combinatorial Optimization
EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7370	Advanced Computer Vision
EECE 7376	Operating Systems: Interface and Implementation
EECE 7377	Scalable and Sustainable System Design
EECE 7397	Advanced Machine Learning
EECE 7398	Special Topics (Compilers)
EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
MATH 7233	Graph Theory
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5600	Computer Systems
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
Courses from the following subject areas may not count toward any concentration within the MSECE program:		
CSYE, ENSY, EMGT, INFO, SBSY, TELE		
The following CS courses may not count toward any concentration within the MSECE program:		
CS 5010	Programming Design Paradigm	
CS 5320		
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
CS 5700	Fundamentals of Computer Networking	
CS 5800	Algorithms	

CS 6350	Empirical Research Methods
CS 6710	Wireless Network

Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 172)	8
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Note: Depth courses cannot be taken for breadth.

Elective	
Complete 4 semester hours of either depth or breadth courses.	4

THESIS OPTION

Code	Title	Hours
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Depth Courses	
Complete 12 semester hours from the depth course list below. (p. 171)	12

Breadth Courses	
Complete 8 semester hours from the breadth course list below or other EECE courses chosen in consultation with a faculty advisor. (p. 172)	8

Note: Depth courses cannot be taken for breadth.

Elective	
Complete 4 additional semester hours from either depth or breadth courses.	4

Thesis		
EECE 7990	Thesis	8

Course Lists

DEPTH COURSES

Code	Title	Hours
EECE 5550	Mobile Robotics	
EECE 5554	Robotics Sensing and Navigation	
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)	
EECE 7150	Autonomous Field Robotics	
EECE 7204	Applied Probability and Stochastic Processes	
EECE 7205	Fundamentals of Computer Engineering	
EECE 7258	Human Sensing and Recognition	
EECE 7323	Numerical Optimization Methods	
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization	
EECE 7352	Computer Architecture	
EECE 7360	Combinatorial Optimization	
EECE 7370	Advanced Computer Vision	
EECE 7397	Advanced Machine Learning	
EECE 7398	Special Topics (Big Data and Sparsity in Control, Machine Learning and Signal Processing)	
EECE 7400	Special Problems in Electrical Engineering	
CS 5100	Foundations of Artificial Intelligence	
CS 6200	Information Retrieval	
CS 6220	Data Mining Techniques	

Program Credit/GPA Requirements

32 total semester hours required
 Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Computer Vision, Machine Learning, and Algorithms, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program**. Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

**GORDON INSTITUTE OF ENGINEERING LEADERSHIP
 Master's Degree in Electrical and Computer Engineering with Concentration in Computer Vision, Machine Learning, and Algorithms with Graduate Certificate in Engineering Leadership**

Students may complete a Master of Science in Electrical and Computer Engineering with Concentration in Computer Vision, Machine Learning, and Algorithms in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved computer vision, machine learning, and algorithms technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Depth Courses		
Complete 20 semester hours from the depth course list below. (p. 171)		20
Breadth Courses		

CS 7800	Advanced Algorithms
MATH 7233	Graph Theory

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things (Wireless Sensor Networks and the Internet of Things – former special topics course)	
EECE 5161	Thin Film Technologies (Thin Film Technologies – former special topics course)	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5552	Assistive Robotics (Principles of Assistive Robotics)	
EECE 5576	Wireless Communication Systems	
EECE 5580	Classical Control Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5610	Digital Control Systems	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5643	Simulation and Performance Evaluation	
EECE 5647	Nanophotonics	
EECE 5648	Biomedical Optics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	
EECE 5664	Biomedical Signal Processing	
EECE 5666	Digital Signal Processing	
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680	
EECE 5682	Power Systems Analysis 1	
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684	
EECE 5686	Electrical Machines	
EECE 5688	Analysis of Unbalanced Power Grids	
EECE 5697	Acoustics and Sensing	
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)	
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Principles of Assistive Robotics)	
EECE 7105	Optics for Engineers	
EECE 7200	Linear Systems Analysis	
EECE 7201	Solid State Devices	
EECE 7202	Electromagnetic Theory 1	
EECE 7203	Complex Variable Theory and Differential Equations	
EECE 7211	Nonlinear Control	
EECE 7213	System Identification and Adaptive Control	
EECE 7214	Optimal and Robust Control	
EECE 7224	Power Systems State Estimation	
EECE 7226	Modeling and Simulation of Power System Transients	
EECE 7228	Advanced Power Electronics (Advanced Power Electronics – former special topics course)	
EECE 7237	Special Topics in Power Electronics	
EECE 7240	Analog Integrated Circuit Design	
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication	
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)	
EECE 7245	Microwave Circuit Design for Wireless Communication	
EECE 7250	Power Management Integrated Circuits (Power Management Integrated Circuits – former special topics course)	
EECE 7263	Humanoid Robotics (Humanoid Robotics – former special topics course)	
EECE 7270	Electromagnetic Theory 2	
EECE 7271	Computational Methods in Electromagnetics	
EECE 7275	Antennas and Radiation	
EECE 7293	Modern Imaging	
EECE 7296	Electronic Materials	
EECE 7297	Advanced Magnetic Materials–Magnetic Devices	
EECE 7298	Magnetic Materials–Fundamentals and Measurements	
EECE 7310	Modern Signal Processing	
EECE 7311	Two Dimensional Signal and Image Processing	
EECE 7312	Statistical and Adaptive Signal Processing	
EECE 7336	Digital Communications	
EECE 7337	Information Theory	
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization	
EECE 7346	Probabilistic System Modeling and Analysis	
EECE 7353	VLSI Design	
EECE 7364	Mobile and Wireless Networking	

Electrical and Computer Engineering with Concentration in Electromagnetics, Plasma, and Optics, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program.**

Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with Concentration in Electromagnetics, Plasma, and Optics with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Electrical and Computer Engineering with Concentration in Electromagnetics, Plasma, and Optics in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved electromagnetics, plasma, and optics technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Depth Courses		
Complete 20 semester hours from the depth course list below. (p. 174)		20
Breadth Courses		
Complete 8 semester hours from the breadth course list below. (p. 174)		8
Note: Depth courses cannot be taken for breadth.		
Elective		
Complete 4 additional semester hours from either depth or breadth courses.		4

EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7374	Fundamentals of Computer Networks
EECE 7376	Operating Systems: Interface and Implementation
EECE 7377	Scalable and Sustainable System Design (Scalable and Sustainable System Design)
EECE 7390	Computer Hardware Security
EECE 7398	Special Topics (Compilers)
EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
CS 5200	Database Management Systems
CS 5600	Computer Systems
CS 5770	Software Vulnerabilities and Security
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
Courses from the following subject areas may not count toward any concentration within the MSECE program:		
CSYE, ENSY, EMGT, INFO, SBSY, TELE		
The following CS courses may not count toward any concentration within the MSECE program:		
CS 5010	Programming Design Paradigm	
CS 5320		
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
CS 5700	Fundamentals of Computer Networking	
CS 5800	Algorithms	
CS 6350	Empirical Research Methods	
CS 6710	Wireless Network	

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

THESIS OPTION

Code	Title	Hours
Depth Courses		
Complete 12 semester hours from the depth course list below. (p. 174)		12
Breadth Courses		
Complete 8 semester hours from the breadth course list below. (p. 174)		8
Note: Depth courses cannot be taken for breadth.		
Elective		
Complete 4 additional semester hours from either depth or breadth courses.		4
Thesis		
EECE 7990	Thesis	8

Course Lists**DEPTH COURSES**

Code	Title	Hours
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5648	Biomedical Optics	
EECE 5697	Acoustics and Sensing	
EECE 7105	Optics for Engineers	
EECE 7202	Electromagnetic Theory 1	
EECE 7203	Complex Variable Theory and Differential Equations	
EECE 7270	Electromagnetic Theory 2	
EECE 7271	Computational Methods in Electromagnetics	
EECE 7275	Antennas and Radiation	
EECE 7293	Modern Imaging	
EECE 7296	Electronic Materials	
EECE 7297	Advanced Magnetic Materials—Magnetic Devices	
EECE 7298	Magnetic Materials—Fundamentals and Measurements	
EECE 7400	Special Problems in Electrical Engineering	

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5161	Thin Film Technologies	
EECE 5550	Mobile Robotics	
EECE 5552	Assistive Robotics (Principles of Assistive Robotics)	
EECE 5554	Robotics Sensing and Navigation (Robotics Sensing and Navigation)	
EECE 5576	Wireless Communication Systems	
EECE 5580	Classical Control Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5610	Digital Control Systems	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5639	Computer Vision	

EECE 5640	High-Performance Computing
EECE 5642	Data Visualization
EECE 5643	Simulation and Performance Evaluation
EECE 5644	Introduction to Machine Learning and Pattern Recognition
EECE 5647	Nanophotonics
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology
EECE 5664	Biomedical Signal Processing
EECE 5666	Digital Signal Processing
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680
EECE 5682	Power Systems Analysis 1
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684
EECE 5686	Electrical Machines
EECE 5688	Analysis of Unbalanced Power Grids
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)
EECE 7150	Autonomous Field Robotics
EECE 7200	Linear Systems Analysis
EECE 7201	Solid State Devices
EECE 7204	Applied Probability and Stochastic Processes
EECE 7205	Fundamentals of Computer Engineering
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7224	Power Systems State Estimation
EECE 7226	Modeling and Simulation of Power System Transients
EECE 7228	Advanced Power Electronics
EECE 7237	Special Topics in Power Electronics
EECE 7240	Analog Integrated Circuit Design
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication

EECE 7244	Introduction to Microelectromechanical Systems (MEMS)
EECE 7245	Microwave Circuit Design for Wireless Communication
EECE 7250	Power Management Integrated Circuits
EECE 7258	Human Sensing and Recognition
EECE 7263	Humanoid Robotics
EECE 7296	Electronic Materials
EECE 7297	Advanced Magnetic Materials—Magnetic Devices
EECE 7298	Magnetic Materials—Fundamentals and Measurements
EECE 7310	Modern Signal Processing
EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7336	Digital Communications
EECE 7337	Information Theory
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 7346	Probabilistic System Modeling and Analysis
EECE 7352	Computer Architecture
EECE 7353	VLSI Design
EECE 7360	Combinatorial Optimization
EECE 7364	Mobile and Wireless Networking
EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7370	Advanced Computer Vision
EECE 7374	Fundamentals of Computer Networks
EECE 7376	Operating Systems: Interface and Implementation
EECE 7377	Scalable and Sustainable System Design (Scalable and Sustainable System Design)
EECE 7390	Computer Hardware Security
EECE 7397	Advanced Machine Learning
EECE 7398	Special Topics (Compilers)
EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
MATH 7233	Graph Theory
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5600	Computer Systems
CS 5770	Software Vulnerabilities and Security
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6410	Compilers

CS 6510	Advanced Software Development
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
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Courses from the following subject areas may not count toward any concentration within the MSECE program:

CSYE, ENSY, EMGT, INFO, SBSY, TELE

The following CS courses may not count toward any concentration within the MSECE program:

CS 5010	Programming Design Paradigm
CS 5320	
CS 5330	Pattern Recognition and Computer Vision
CS 5340	Computer/Human Interaction
CS 5520	Mobile Application Development
CS 5610	Web Development
CS 5700	Fundamentals of Computer Networking
CS 5800	Algorithms
CS 6350	Empirical Research Methods
CS 6710	Wireless Network

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Microsystems, Materials, and Devices, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program.**

Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with Concentration in Microsystems, Materials, and Devices with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Electrical and Computer Engineering with Concentration in Microsystems, Materials, and Devices in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved microsystems, materials, and devices technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Depth Courses		
Complete 20 semester hours from the depth course list below. (p. 176)		20
Breadth Courses		
Complete 8 semester hours from the breadth course list below. (p. 176)		8
Note: Depth courses cannot be taken for breadth.		
Elective		
Complete 4 additional semester hours from either depth or breadth courses.		4

THESIS OPTION

Code	Title	Hours
Depth Courses		
Complete 12 semester hours from the depth course list below. (p. 176)		12
Breadth Courses		
Complete 8 semester hours from the breadth course list below. (p. 176)		8
Note: Depth courses cannot be taken for breadth.		
Elective		
Complete 4 additional semester hours from either depth or breadth courses.		4

Thesis

EECE 7990	Thesis	8
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Course Lists

DEPTH COURSES

Code	Title	Hours
EECE 5161	Thin Film Technologies	
EECE 5606	Micro- and Nanofabrication	
EECE 5647	Nanophotonics	
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	
EECE 5652	Microwave Circuits and Networks	
EECE 7201	Solid State Devices	

EECE 7240	Analog Integrated Circuit Design
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)
EECE 7245	Microwave Circuit Design for Wireless Communication
EECE 7250	Power Management Integrated Circuits
EECE 7296	Electronic Materials
EECE 7297	Advanced Magnetic Materials—Magnetic Devices
EECE 7298	Magnetic Materials—Fundamentals and Measurements
EECE 7353	VLSI Design
EECE 7400	Special Problems in Electrical Engineering

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5550	Mobile Robotics	
EECE 5552	Assistive Robotics	
EECE 5554	Robotics Sensing and Navigation	
EECE 5576	Wireless Communication Systems	
EECE 5580	Classical Control Systems	
EECE 5610	Digital Control Systems	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 5642	Data Visualization	
EECE 5643	Simulation and Performance Evaluation	
EECE 5648	Biomedical Optics	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5664	Biomedical Signal Processing	
EECE 5666	Digital Signal Processing	
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680	
EECE 5682	Power Systems Analysis 1	
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684	
EECE 5686	Electrical Machines	
EECE 5688	Analysis of Unbalanced Power Grids	
EECE 5697	Acoustics and Sensing	
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)	
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)	

EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)
EECE 7105	Optics for Engineers
EECE 7150	Autonomous Field Robotics
EECE 7200	Linear Systems Analysis
EECE 7202	Electromagnetic Theory 1
EECE 7203	Complex Variable Theory and Differential Equations
EECE 7204	Applied Probability and Stochastic Processes
EECE 7205	Fundamentals of Computer Engineering
EECE 7211	Nonlinear Control
EECE 7213	System Identification and Adaptive Control
EECE 7214	Optimal and Robust Control
EECE 7224	Power Systems State Estimation
EECE 7226	Modeling and Simulation of Power System Transients
EECE 7228	Advanced Power Electronics
EECE 7237	Special Topics in Power Electronics
EECE 7258	Human Sensing and Recognition
EECE 7263	Humanoid Robotics
EECE 7270	Electromagnetic Theory 2
EECE 7271	Computational Methods in Electromagnetics
EECE 7275	Antennas and Radiation
EECE 7310	Modern Signal Processing
EECE 7311	Two Dimensional Signal and Image Processing
EECE 7312	Statistical and Adaptive Signal Processing
EECE 7323	Numerical Optimization Methods
EECE 7336	Digital Communications
EECE 7337	Information Theory
EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 7346	Probabilistic System Modeling and Analysis
EECE 7352	Computer Architecture
EECE 7360	Combinatorial Optimization
EECE 7364	Mobile and Wireless Networking
EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7370	Advanced Computer Vision
EECE 7374	Fundamentals of Computer Networks
EECE 7376	Operating Systems: Interface and Implementation
EECE 7377	Scalable and Sustainable System Design (Scalable and Sustainable System Design)
EECE 7390	Computer Hardware Security
EECE 7397	Advanced Machine Learning

EECE 7398	Special Topics (Compilers)
EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7398	Special Topics (Power System Constrained Optimization)
EECE 7399	Preparing High-Stakes Written and Oral Materials
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage
MATH 7233	Graph Theory
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5600	Computer Systems
CS 5770	Software Vulnerabilities and Security
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
CS 6410	Compilers
CS 6510	Advanced Software Development
CS 6740	Network Security
CS 6750	Cryptography and Communications Security
CS 6760	Privacy, Security, and Usability
CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
Courses from the following subject areas may not count toward any concentration within the MSECE program:		
CSYE, ENSY, EMGT, INFO, SBSY, TELE		
The following CS courses may not count toward any concentration within the MSECE program:		
CS 5010	Programming Design Paradigm	
CS 5320		
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 5520	Mobile Application Development	
CS 5610	Web Development	
CS 5700	Fundamentals of Computer Networking	
CS 5800	Algorithms	
CS 6350	Empirical Research Methods	
CS 6710	Wireless Network	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Electrical and Computer Engineering with Concentration in Power Systems, MSECE

The master's degree program in electrical and computer engineering offers in-depth course work within the concentration-choice-related areas. The curriculum is integrated and intensive and is built on state-of-the-art research, taught by faculty who are experts in their areas.

Excluded Courses for All MSECE Concentrations

You **cannot take excluded courses as part of your MSECE program**. Please **do not** petition to take these courses, as any petition to take these courses will be automatically rejected. Courses from the following subject areas may not count toward any concentration within the MSECE program: CSYE, ENSY, EMGT, INFO, SBSY, TELE. Select CS courses are also excluded from all MSECE concentrations. Please see the program requirements tab and your college administrator for more information.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Electrical and Computer Engineering with Concentration in Power Systems with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Electrical and Computer Engineering with Concentration in Power Systems in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 48-semester-hour degree and certificate will require 32 semester hours of advisor-approved power systems technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
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Depth Courses

Complete 20 semester hours from the depth course list below. (p. 178)	20
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Breadth Courses

Complete 8 semester hours from the breadth course list below. (p. 178)	8
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Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 additional semester hours from either depth or breadth courses.	4
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THESIS OPTION

Code	Title	Hours
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Depth Courses

Complete 12 semester hours from the depth course list below. (p. 178)	12
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Breadth Courses

Complete 8 semester hours from the breadth course list below. (p. 178)	8
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Note: Depth courses cannot be taken for breadth.

Elective

Complete 4 additional semester hours from either the depth or breadth courses.	4
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Thesis

EECE 7990	Thesis	8
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Course Lists

DEPTH COURSES

Code	Title	Hours
EECE 5580	Classical Control Systems	
EECE 5610	Digital Control Systems	
EECE 5680 and EECE 5681	Electric Drives and Lab for EECE 5680	
EECE 5682	Power Systems Analysis 1	
EECE 5684 and EECE 5685	Power Electronics and Lab for EECE 5684	
EECE 5686	Electrical Machines	
EECE 5688	Analysis of Unbalanced Power Grids	
EECE 7200	Linear Systems Analysis	
EECE 7211	Nonlinear Control	
EECE 7213	System Identification and Adaptive Control	
EECE 7214	Optimal and Robust Control	
EECE 7224	Power Systems State Estimation	
EECE 7226	Modeling and Simulation of Power System Transients	
EECE 7228	Advanced Power Electronics	
EECE 7237	Special Topics in Power Electronics	
EECE 7250	Power Management Integrated Circuits	
EECE 7323	Numerical Optimization Methods	
EECE 7398	Special Topics (Power System Constrained Optimization)	
EECE 7400	Special Problems in Electrical Engineering	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	

BREADTH COURSES

Code	Title	Hours
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5161	Thin Film Technologies	
EECE 5170	Introduction to Multiferroics Materials and Systems	
EECE 5552	Assistive Robotics	
EECE 5554	Robotics Sensing and Navigation	
EECE 5576	Wireless Communication Systems	
EECE 5606	Micro- and Nanofabrication	
EECE 5627	Arithmetic and Circuit Design for Inexact Computing with Nanoscaled CMOS	
EECE 5639	Computer Vision	
EECE 5640	High-Performance Computing	
EECE 5642	Data Visualization	
EECE 5643	Simulation and Performance Evaluation	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	

EECE 5647	Nanophotonics	EECE 7311	Two Dimensional Signal and Image Processing
EECE 5648	Biomedical Optics	EECE 7312	Statistical and Adaptive Signal Processing
EECE 5649	Design of Analog Integrated Circuits with Complementary Metal-Oxide-Semiconductor Technology	EECE 7323	Numerical Optimization Methods
EECE 5664	Biomedical Signal Processing	EECE 7336	Digital Communications
EECE 5666	Digital Signal Processing	EECE 7337	Information Theory
EECE 5697	Acoustics and Sensing	EECE 7345	Big Data and Sparsity in Control, Machine Learning, and Optimization
EECE 5698	Special Topics in Electrical and Computer Engineering (GNSS Signal Processing)	EECE 7346	Probabilistic System Modeling and Analysis
EECE 5698	Special Topics in Electrical and Computer Engineering (Introduction to Molecular Systems Biology Dynamic Modeling)	EECE 7352	Computer Architecture
EECE 5698	Special Topics in Electrical and Computer Engineering (Networks: Technology, Economics, Social Interactions)	EECE 7353	VLSI Design
EECE 5698	Special Topics in Electrical and Computer Engineering (Software Security)	EECE 7360	Combinatorial Optimization
EECE 5698	Special Topics in Electrical and Computer Engineering (Advanced Network Management)	EECE 7364	Mobile and Wireless Networking
EECE 5698	Special Topics in Electrical and Computer Engineering (Parallel Processing for Data Analytics)	EECE 7368	High-Level Design of Hardware-Software Systems
EECE 7105	Optics for Engineers	EECE 7370	Advanced Computer Vision
EECE 7150	Autonomous Field Robotics	EECE 7374	Fundamentals of Computer Networks
EECE 7201	Solid State Devices	EECE 7376	Operating Systems: Interface and Implementation
EECE 7202	Electromagnetic Theory 1	EECE 7377	Scalable and Sustainable System Design
EECE 7203	Complex Variable Theory and Differential Equations	EECE 7390	Computer Hardware Security
EECE 7204	Applied Probability and Stochastic Processes	EECE 7397	Advanced Machine Learning
EECE 7205	Fundamentals of Computer Engineering	EECE 7398	Special Topics (Compilers)
EECE 7240	Analog Integrated Circuit Design	EECE 7398	Special Topics (Advanced Computer Architecture)
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication	EECE 7399	Preparing High-Stakes Written and Oral Materials
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)	MATH 7233	Graph Theory
EECE 7245	Microwave Circuit Design for Wireless Communication	CS 5100	Foundations of Artificial Intelligence
EECE 7258	Human Sensing and Recognition	CS 5200	Database Management Systems
EECE 7263	Humanoid Robotics	CS 5600	Computer Systems
EECE 7270	Electromagnetic Theory 2	CS 5770	Software Vulnerabilities and Security
EECE 7271	Computational Methods in Electromagnetics	CS 6200	Information Retrieval
EECE 7275	Antennas and Radiation	CS 6220	Data Mining Techniques
EECE 7293	Modern Imaging	CS 6410	Compilers
EECE 7296	Electronic Materials	CS 6510	Advanced Software Development
EECE 7297	Advanced Magnetic Materials—Magnetic Devices	CS 6740	Network Security
EECE 7298	Magnetic Materials—Fundamentals and Measurements	CS 6750	Cryptography and Communications Security
EECE 7310	Modern Signal Processing	CS 6760	Privacy, Security, and Usability
		CS 7800	Advanced Algorithms

EXCLUDED COURSES FOR ALL MSECE CONCENTRATIONS

Please see your college administrator for more information.

Code	Title	Hours
Courses from the following subject areas may not count toward any concentration within the MSECE program:		
CSYE, ENSY, EMGT, INFO, SBSY, TELE		
The following CS courses may not count toward any concentration within the MSECE program:		
CS 5010	Programming Design Paradigm	
CS 5320		

CS 5330	Pattern Recognition and Computer Vision
CS 5340	Computer/Human Interaction
CS 5520	Mobile Application Development
CS 5610	Web Development
CS 5700	Fundamentals of Computer Networking
CS 5800	Algorithms
CS 6350	Empirical Research Methods
CS 6710	Wireless Network

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Electrical and Computer Engineering Leadership, MSECEL

The Gordon Engineering Leadership Program is a transformational, technical, and challenging graduate-level learning experience targeted for engineering professionals.

The Gordon Institute, in collaboration with the College of Engineering, offers the **Master of Science in Electrical and Computer Engineering Leadership (MSECEL)** along with the **Graduate Certificate in Engineering Leadership** as formal recognition of the combined focus in electrical and computer engineering technical skills and midlevel engineers' leadership acumen and broadened cross-functional capabilities.

Pursuing the MSECEL and the graduate certificate allows participants to:

- Enhance technical knowledge in electrical and computer engineering
- Take part in a hands-on curriculum (<http://www.northeastern.edu/gordonleadership/about-the-institute/curriculum>) taught by industry-experienced professors
- Work with peers from across engineering fields on leadership skills development
- Receive one-on-one mentoring from industry experts and faculty

The Gordon Engineering Leadership Program anchors around an intense, market-worthy challenge project based on your organization's strategic needs. This is a unique opportunity to apply your classroom experience to a professional setting, potentially further accelerating your career.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Leadership		
ENLR 5121	Engineering Leadership 1	2
ENLR 5122	Engineering Leadership 2	2
Foundations		
ENLR 5131	Scientific Foundations of Engineering 1	2
ENLR 5132	Scientific Foundations of Engineering 2	2
Project		
ENLR 7440	Engineering Leadership Challenge Project 1	4
ENLR 7442	Engineering Leadership Challenge Project 2	4

Concentration Courses

Complete 16 semester hours from any of the approved depth/breadth course lists within any of the seven EECE concentrations. Students are encouraged to take at least three courses within the same concentration.

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Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Mechanical and Industrial Engineering

Website (<http://www.mie.neu.edu/mie/degrees-programs/graduate-studies>)

Hanchen Huang, PhD
Professor and Chair

Nader Jalili, PhD
Professor and Associate Chair for Graduate Studies and Research

334 Snell Engineering Center
617.373.2740
617.373.2921 (fax)

The Department of Mechanical and Industrial Engineering (MIE) offers comprehensive research and educational programs for both Master of Science (MS) and Doctor of Philosophy (PhD) students in both traditional mechanical and industrial engineering, operations research, data analytics engineering, as well as applied programs. Our cutting-edge and vibrant doctoral programs include PhDs in industrial engineering, mechanical engineering, and an interdisciplinary PhD (housed in the College of Engineering); while our MS degree programs consist of industrial engineering, operations research, data analytics engineering, as well as mechanical engineering with concentrations in materials science, mechanics and design, mechatronics, thermofluids, and general mechanical engineering. These extensive programs and concentrations allow for the selection of a degree that meets a wide variety of personal and professional goals. Graduate students work with our world-renowned faculty to achieve research experience and their career goals and have opportunities to participate in the graduate cooperative education program.

Mission of the Department

In accordance with the missions of Northeastern University and the College of Engineering, the primary mission of the MIE department is the education of PhD and MS students in the fundamental principles and practice of mechanical and industrial engineering as well as operations research. Furthermore, the MIE department will, through the basic and applied research done by its faculty and students, contribute to the advancement of the body of knowledge useful to industry and governments.

Master of Science Degree

The MIE department offers MS degrees in industrial engineering, operations research, and data analytics engineering. The MIE department also offers an MS degree in mechanical engineering with one of the following five concentrations:

- General mechanical engineering
- Materials science
- Mechanics and design

- Mechatronics
- Thermofluids

Doctor of Philosophy Degree

The MIE department admits applicants to the PhD program either directly after earning a suitable bachelor's degree (direct entry) or after earning a master's degree (advanced entry). Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral exams) and all the required course work. The PhD is awarded to students who demonstrate high academic achievement and research competence in the fields of mechanical or industrial engineering. The MIE department expects all successful doctoral candidates to show depth of knowledge and research innovation in their chosen field of specialization.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the MS degree.

Programs

Doctor of Philosophy (PhD)

- Industrial Engineering (p. 181)
- Industrial Engineering—Advanced Entry (p. 184)
- Mechanical Engineering (p. 186)
- Mechanical Engineering—Advanced Entry (p. 189)

Master of Science (MS)

- Data Analytics Engineering (p. 192)
- Robotics (p. 195)

Master of Science in Industrial Engineering (MSIE)

- Industrial Engineering (p. 196)

Master of Science in Mechanical Engineering (MSME)

- Mechanical Engineering with Concentration in General Mechanical Engineering (p. 198)
- Mechanical Engineering with Concentration in Mechanics and Design (p. 202)
- Mechanical Engineering with Concentration in Materials Science (p. 200)
- Mechanical Engineering with Concentration in Mechatronics (p. 203)
- Mechanical Engineering with Concentration in Thermofluids (p. 205)

Master of Science in Operations Research (MSOR)

- Operations Research (p. 207)

Graduate Certificate

- Data Analytics Engineering (p. 209)
- Data Mining Engineering (p. 210)

Industrial Engineering, PhD

Requirements

The Doctor of Philosophy (PhD) is awarded to students who demonstrate high academic achievement and research competence in the field of industrial engineering. To earn a PhD, a student must complete approved and advanced course work and submit and defend an original dissertation of independent research. The Department of Mechanical and Industrial Engineering (MIE) expects all successful doctoral candidates to show depth of knowledge and research innovation in their chosen field of specialization.

The MIE department admits applicants to the PhD program either directly after earning a suitable bachelor's degree (i.e., bachelor's entry) or after earning a master's degree (i.e., advanced entry). Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral exams) as well as all the required course work.

Academic and Research Advisors

PhD students must find a research advisor within their first year of study. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Students are advised by the academic advisor of their discipline before they select their research advisor(s).

Change of Research Advisor

Students who want to change their research advisors need to use the MIE petition form. The petition form needs to be signed both by the student and the student's current and future research advisors. The signed form then needs to be submitted to the MIE department for further processing.

Course Requirements and Plan of Study

A typical program of study includes at least 40 semester hours of course work beyond a bachelor's degree. Students who choose to get a master's degree along the way to PhD must complete a total of 52 semester hours (32 semester hours to earn a master's degree and an additional 20 semester hours in order to earn a PhD). The 32 semester hours of course work that apply toward the master's degree may include up to 8 semester hours of thesis or 4 semester hours of project or approved independent study course work. Students may petition the MIE Graduate Affairs Committee to substitute up to 4 semester hours of Independent Study (IE 7978) as part of their required course work. An independent study must be approved by the research advisor. When thesis or project is selected, an independent study course cannot be taken.

Each doctoral student, together with his or her research advisor, should develop an initial program during the first semester of study. The final program is also subject to the approval of the dissertation committee, who will add the program of study to the student's record upon admission to doctoral candidacy.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this

important requirement. The outcome of the online session will be filed with the student's records.

PhD Students Annual Review

All PhD students in the MIE department must complete the PhD Students Annual Review form and submit the required documents by no later than January 31st of their third year of study (second year for PhD advanced entry) and all subsequent years thereafter.

PhD Candidacy

To qualify as a doctoral candidate, a doctoral student must successfully complete the doctoral qualifying examinations (both a written comprehensive exam and an oral exam—see below) as well as all the required course work.

Doctoral Qualifying Examinations

Background and motivation: To demonstrate breadth and depth in each of the subject exams, crossover and merging exams are necessary in an effort to provide students with an opportunity to master the core disciplines in mechanical or industrial engineering (at both undergraduate and graduate levels) along with a focus area of importance to their specialization. These exams also provide an assessment as to whether students have adequate knowledge to pursue advanced study and possess attributes of a doctoral candidate by demonstrating understanding of and the ability to apply fundamental principles. Also, an oral exam tied to the written exams is necessary in an effort to evaluate a student's potential to perform independent research in the chosen field of specialization for the doctoral program.

Doctoral qualifying examinations framework: The doctoral qualifying examinations consist of the following two parts:

1. Two **written comprehensive** exams, which are respectively referred to as exam A and exam B
2. An **oral** exam to be administered no later than the end of the semester in which the written exams are taken and passed

WRITTEN COMPREHENSIVE EXAMINATIONS

All doctoral students admitted directly with a bachelor's degree must take the written comprehensive exams no later than the first time that it is offered after their first two years of study. The written comprehensive exams include two exams, **exam A** and **exam B**, and are given on Thursday and Friday of the first week of classes during regular semesters. A complete list of these exams along with topical coverage and details are provided on the MIE department graduate website (<http://www.mie.neu.edu/mie/degrees-programs/graduate-studies>). Students should also consult extensively with their research advisor regarding all aspects of the qualifying exams.

Written Comprehensive Exams Rules

Exam A, about four to six hours in length, should be selected from the list of major exams based on the student's concentration (i.e., industrial engineering—IND), see below. No deviation from this rule will be permitted. As listed below, exam B, about one to two hours in length, should be selected from the list of exams B for PhD degree program in industrial engineering (see below). Only one exam from this list should be selected. All students are required to have their research advisor's approval on selection of exam B prior to registering to take the written comprehensive exams. Note that exam B cannot be similar or close to one of the topics covered in exam A.

List of exams A and B based on student's research concentration:

Exams A for Industrial Engineering PhD Students:

- **Industrial Engineering (IND):** Probability (IND1), Statistics and Probabilistic OR (IND2), and Deterministic OR (IND3)

Sample Exams B for Industrial Engineering PhD Students (select one Exam B):

- Data Mining (DMN)
- Human-Machine Systems (HMS)
- Manufacturing Systems (MFS)
- Networks and Advanced Optimization (NAO)
- Reliability and Quality Assurance (RQA)
- Supply Chain Engineering (SCE)

ORAL EXAMINATION

The objective of the oral exam is to assess a student's potential to perform independent research in the chosen field of specialization. This exam shall be administered no later than the end of the semester in which the written exams are taken and passed. The exam shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate.

Oral examination procedure: The student's research advisor convenes and chairs an oral examination committee comprised of a minimum of three faculty members deemed appropriate by the research advisor. This committee provides a set of technical papers pertinent to the student's research area at least one month before the examination. The oral examination committee will then conduct the exam that comprises the following two parts (both completed in a one-hour session):

1. A 30-minute oral presentation on a selected number of papers out of the assigned technical papers
2. A 30-minute oral exam by committee members' questions and evaluation of the student covering topics specifically related to the student's research area

GRADING PROCEDURE

Grading procedure and results of the written comprehensive

examination: The MIE Graduate Affairs Committee will review all students' performance in the written comprehensive exams. Depending on the results of both major and minor exams and in consultation with the student's research advisor, the Graduate Affairs Committee will recommend one of the following three possible options:

1. No invitation to oral exam: The student will be dismissed from the program. He or she may be granted a master's degree if the requirements are already met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).
2. No invitation to oral exam yet: The student will be asked to retake the written exam(s) again in the next offering and/or take additional courses.
3. Student is invited to oral exam.

The Graduate Affairs Committee makes its final recommendation considering all aspects of the exam including, but not limited to, examiners' reports and results and the student's research performance and course work. The Graduate Affairs Committee reserves the right to recommend option 1 above for students who register for the exams but do not show up.

Grading procedure and results of the oral examination: If the student's performance in the oral exam is not satisfactory, the student will be dismissed from the program. He or she may be granted a master's degree if the requirements are met; otherwise, the student may continue to fulfill

the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).

Upon successfully passing the oral exam, the student continues in the PhD program. Upon passing all the required course work, he or she will become a PhD candidate. The results of written and oral exams and any recommended course work will become part of the student's record.

APPEAL PROCEDURE

The preliminary qualifying examination process provides means for reevaluation for students who fail one or more exams to appeal the Graduate Affairs Committee decision. All communications related to these examinations should be coordinated through the student's research advisor. Only the student's research advisor may request the MIE Graduate Affairs Committee to reevaluate the student's failed exams using the appeal form found at the link (<http://www.coe.neu.edu/sites/default/files/pdfs/coe/gse/miepetitionform.pdf>).

PhD Students Changing Their Program

PhD students who, for any reason, decide to change their program (i.e., from PhD in ME to PhD in IE or vice versa) must take (or retake) the doctoral qualifying examinations (both written comprehensive exams and oral exam) based on the student's new major research area (i.e., industrial engineering, materials, mechanics, mechatronics, or thermofluids).

Interdisciplinary PhD Students with MIE as the Home Department

Students pursuing the College of Engineering (COE) interdisciplinary PhD program with the MIE department as their home department must take one of the major written comprehensive exams (exam A) of the MIE doctoral qualifying examinations. The minor exam (exam B) can be substituted with appropriate exam(s) from other department(s) involved with the student's interdisciplinary PhD program. Students dismissed from the ME or IE PhD programs in the MIE department cannot enroll in the PhD Interdisciplinary Engineering program with MIE as the primary affiliation.

Dissertation Proposal Preparation and Presentation Timing

Students must present their dissertation proposal no more than 12 months after successfully completing the oral exam. In addition, the presentation of the dissertation proposal and the actual dissertation defense (see below) shall be no less than 6 months apart. The student's dissertation committee will invite any additional faculty deemed appropriate to that field; this dissertation committee will then conduct the dissertation proposal session. Each student's dissertation committee must be comprised of at least three members, including the research advisor. At least two of those three members must be full-time MIE faculty members.

Dissertation Course Requirements

Upon successful completion of the doctoral qualifying examinations (both written preliminary and oral exams) as well as all the required course work, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (IE 9990). Upon completion of this sequence, the student must then register for Dissertation Continuation (IE 9996) in every semester (in each fall and spring semester and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (IE 9996) until they complete the two-semester registration sequence for Dissertation (IE 9990).

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached

PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (IE 8960), can be taken if needed to meet the full-time course registration requirement. Candidacy Preparation—Doctoral (IE 8960) is an individual instruction course, billed as one semester hour, and graded as S or U. This course does not have any course content, and students must register in a section for which their research or academic advisor is listed as the "instructor" in the online registration system.

Final Oral (Dissertation Defense) Examination

All doctoral candidates must pass a final oral exam. This exam will be scheduled once the dissertation committee agrees that the candidate's research has reached a stage where it is appropriate for a formal presentation and after completion of all other requirements for the PhD, including all course work approved in the final program of study. The objective of the exam is for the candidate to present and defend the results of the dissertation research and to demonstrate depth of knowledge and significant expertise in the area of that research under questioning from the dissertation committee and other attendees.

The exam shall be publicly advertised at least one week in advance and all faculty members may attend and participate. At the conclusion of the presentation and subsequent questions period, the dissertation committee will convene to determine the outcome. The committee may recommend that the candidate be awarded the PhD or may require additional research and/or modifications of the dissertation. In some cases, candidates may be asked to present an additional final oral dissertation defense.

Residency Requirement

After achieving PhD candidacy, the university residency requirement is satisfied by two semesters of full-time graduate registration or four semesters of part-time graduate registration. Students must be continually enrolled during the pursuit of their dissertation.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Doctoral qualifying exams (both written comprehensive and oral area exams)
- Annual review
- Dissertation committee formation
- Dissertation proposal
- Dissertation defense

Core Requirements

Code	Title	Hours
Recommended Courses (semester hours can be counted towards course work component with advisor approval)		
MEIE 6830	Graduate Traineeship I (Technical Writing and Communications) (2 SHs)	
MEIE 6860	Graduate Traineeship II (Research Ethics and Professional Development) (2 SHs)	
Approved Course Work		

Requires 40 semester hours of course work, including up to 4 semester hours of Independent Study (IE 7978). Students who choose to get a master's degree along the way to PhD must complete a total of 52 semester hours (32 semester hours toward the sought master's degree and 20 semester hours beyond the earned master's degree). The 32 semester hours applied toward the master's degree may include up to 8 semester hours of MS Thesis or 4 semester hours of MS Project or approved independent study course work. Please consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
ME 9990	Dissertation	40

Complete the following (repeatable) course twice. Must register in two consecutive semesters (may include full summer term).

Program Credit/GPA Requirements

40 total semester hours required
Minimum 3.000 GPA required

Industrial Engineering, PhD—Advanced Entry

Requirements

The Doctor of Philosophy (PhD) is awarded to students who demonstrate high academic achievement and research competence in the field of industrial engineering. To earn a PhD, a student must complete approved and advanced course work and submit and defend an original dissertation of independent research. The Department of Mechanical and Industrial Engineering (MIE) expects all successful doctoral candidates to show depth of knowledge and research innovation in their chosen field of specialization.

The MIE department admits applicants to the PhD program either directly after earning a suitable bachelor's degree (i.e., direct entry) or after earning a master's degree (i.e., advanced entry). Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral exams) and all the required course work.

Academic and Research Advisors

PhD students must find a research advisor within their first year of study. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Students are advised by the academic advisor of their discipline before they select their research advisor(s).

Change of Research Advisor

Students who want to change their research advisors need to use the MIE petition form. The petition form needs to be signed both by the student and the student's current and future research advisors. The signed form needs to be submitted to the MIE department for further processing.

Course Requirements and Plan of Study

A typical program of study includes at least 20 semester hours of course work beyond a master's degree. Students may petition the MIE Graduate Affairs Committee to substitute up to 4 semester hours of Independent

Study (IE 7978) as part of their required course work. An independent study must be approved by the research advisor.

Each doctoral student, together with his or her research advisor, should develop an initial program during the first semester of study. The final program is also subject to the approval of the dissertation committee, who will add the program of study to the student's record upon admission to doctoral candidacy.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

PhD Students Annual Review

All PhD students in the MIE department must complete the PhD Students Annual Review form and submit the required documents by no later than January 31st of their second year of study (third year for PhD direct entry) and all subsequent years thereafter.

PhD Candidacy

To qualify as a doctoral candidate, a doctoral student must successfully complete the doctoral qualifying examinations (both a written comprehensive exam and an oral exam—see below) as well as all the required course work.

Doctoral Qualifying Examinations

Background and motivation: To demonstrate breadth and depth in each of the subject exams, crossover and merging exams are necessary in an effort to provide students with an opportunity to master the core disciplines in mechanical or industrial engineering (at both undergraduate and graduate levels) along with a focus area of importance to their specialization. These exams also provide an assessment as to whether students have adequate knowledge to pursue advanced study and possess attributes of a doctoral candidate by demonstrating understanding of and the ability to apply fundamental principles. Also, an oral exam tied to the written exams is necessary in an effort to evaluate the student's potential to perform independent research in the chosen field of specialization for the doctoral program.

Doctoral qualifying examinations framework: The doctoral qualifying examinations consist of the following two parts:

1. Two **written comprehensive** exams, which are respectively referred to as exam A and exam B
2. An **oral** exam to be administered no later than the end of the semester in which the written exams are taken and passed

WRITTEN COMPREHENSIVE EXAMINATIONS

All doctoral students admitted directly with a bachelor's degree must take the written comprehensive exams no later than the first time that it is offered after their first two years of study. The written comprehensive exams include two exams, **exam A** and **exam B**, and are given on Thursday and Friday of the first week of classes during regular semesters. A complete list of these exams along with topical coverage and details are provided on the MIE department graduate website (<http://www.mie.neu.edu/mie/degrees-programs/graduate-studies>). Students should also consult extensively with their research advisor regarding all aspects of the qualifying exams.

Written Comprehensive Exams Rules

Exam A, about four to six hours in length, should be selected from the list of major exams based on the student's concentration (i.e., industrial engineering—IND), see below. No deviation from this rule will be permitted. As listed below, exam B, about one to two hours in length, should be selected from the list of exams B for PhD degree program in industrial engineering (see below). Only one exam from this list should be selected. All students are required to have their research advisor's approval on selection of exam B prior to registering to take the written comprehensive exams. Note that exam B cannot be similar or close to one of the topics covered in exam A.

List of exams A and B based on student's research concentration:

Exams A for Industrial Engineering PhD Students:

- **Industrial Engineering (IND):** Probability (IND1), Statistics and Probabilistic OR (IND2), and Deterministic OR (IND3)

Sample Exams B for Industrial Engineering PhD Students (select one Exam B):

- Data Mining (DMN)
- Human-Machine Systems (HMS)
- Manufacturing Systems (MFS)
- Networks and Advanced Optimization (NAO)
- Reliability and Quality Assurance (RQA)
- Supply Chain Engineering (SCE)

ORAL EXAMINATION

The objective of the oral exam is to assess a student's potential to perform independent research in the chosen field of specialization. This exam shall be administered no later than the end of the semester in which the written exams are taken and passed. The exam shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate.

Oral examination procedure: The student's research advisor convenes and chairs an oral examination committee comprised of a minimum of three faculty members deemed appropriate by the research advisor. This committee provides a set of technical papers pertinent to the student's research area at least one month before the examination. The oral examination committee will then conduct the exam that comprises the following two parts (both completed in a one-hour session):

1. A 30-minute oral presentation on a selected number of papers out of the assigned technical papers
2. A 30-minute oral exam by committee members' questions and evaluation of the student covering topics specifically related to the student's research area

GRADING PROCEDURE

Grading procedure and results of the written comprehensive examination:

The MIE Graduate Affairs Committee will review all students' performance in the written comprehensive exams. Depending on the results of both major and minor exams and in consultation with the student's research advisor, the Graduate Affairs Committee will recommend one of the following three possible options:

1. No invitation to oral exam: The student will be dismissed from the program. He or she may be granted a master's degree if the requirements are already met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).

2. No invitation to oral exam yet: The student will be asked to retake the written exam(s) again in the next offering and/or take additional courses.
3. Student is invited to oral exam.

The Graduate Affairs Committee makes its final recommendation considering all aspects of the exam including, but not limited to, examiners' reports and results and student's research performance and course work. The Graduate Affairs Committee reserves the rights to recommend option 1 above for students who register for the exams but do not show up.

Grading procedure and results of the oral examination: If the student's performance in the oral exam is not satisfactory, the student will be dismissed from the program. He or she may be granted a master's degree if the requirements are met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).

Upon successfully passing the oral exam, the student continues in the PhD program. Upon passing all the required course work, he or she will become a PhD candidate. The results of written and oral exams and any recommended course work will become part of the student's record.

APPEAL PROCEDURE

The preliminary qualifying examination process provides means for reevaluation for students who fail one or more exams to appeal the Graduate Affairs Committee decision. All communications related to these examinations should be coordinated through the student's research advisor. Only the student's research advisor may request the MIE Graduate Affairs Committee to reevaluate the student's failed exams using the appeal form found at the link (<http://www.coe.neu.edu/sites/default/files/pdfs/coe/gse/miepetitionform.pdf>).

PhD Students Changing Their Program

PhD students who, for any reason, decide to change their program (i.e., from PhD in ME to PhD in IE or vice versa) must take (or retake) the doctoral qualifying examinations (both written comprehensive exams and oral exam) based on the student's new major research area (i.e., industrial engineering, materials, mechanics, mechatronics, or thermofluids).

Interdisciplinary PhD Students with MIE as the Home Department

Students pursuing the College of Engineering (COE) interdisciplinary PhD program with the MIE department as their home department must take one of the major written comprehensive exams (exam A) of the MIE doctoral qualifying examinations. The minor exam (exam B) can be substituted with appropriate exam(s) from other department(s) involved with the student's interdisciplinary PhD program. Students dismissed from the ME or IE PhD programs in the MIE department cannot enroll in the PhD Interdisciplinary Engineering program with MIE as the primary affiliation.

Dissertation Proposal Preparation and Presentation Timing

Students must present their dissertation proposal no more than 12 months after successfully completing the oral exam. In addition, the presentation of the dissertation proposal and the actual dissertation defense (see below) shall be no less than 6 months apart. The student's dissertation committee will invite any additional faculty deemed appropriate to that field; this dissertation committee will then conduct the dissertation proposal session. Each student's dissertation committee must be comprised of at least three members, including the research

advisor. At least two of those three members must be full-time MIE faculty members.

Dissertation Course Requirements

Upon successful completion of the doctoral qualifying examinations (both written preliminary and oral exams) as well as all the required course work, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (IE 9990). Upon completion of this sequence, the student must then register for Dissertation Continuation (IE 9996) in every semester (in each fall and spring term and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (IE 9996) until they fulfill the two-semester registration sequence for Dissertation (IE 9990)

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (IE 8960), can be taken if needed to fulfill the full-time course registration requirement. Candidacy Preparation—Doctoral (IE 8960) is an individual instruction course, billed as one semester hour, and graded as S or U. Candidacy Preparation—Doctoral (IE 8960) does not have any course content, and students must register in a section for which their research or academic advisor is listed as the “instructor” in the online course registration system.

Final Oral (Dissertation Defense) Examination

All doctoral candidates must pass a final oral exam. This exam will be scheduled once the dissertation committee agrees that the candidate's research has reached a stage where it is appropriate for a formal presentation and after completion of all other requirements for the PhD, including all course work approved in the final program of study. The objective of the exam is for the candidate to present and defend the results of the dissertation research and to demonstrate depth of knowledge and significant expertise in the area of that research under questioning from the dissertation committee and other attendees.

The exam shall be publicly advertised at least one week in advance and all faculty members may attend and participate. At the conclusion of the presentation and subsequent questions period, the dissertation committee will convene to determine the outcome. The committee may recommend that the candidate be awarded the PhD or may require additional research and/or modifications of the dissertation. In some cases, candidates may be asked to present an additional final oral dissertation defense.

Residency Requirement

After achieving PhD candidacy, the university residency requirement is satisfied by two semesters of full-time graduate registration or four semesters of part-time graduate registration. Students must be continually enrolled during the pursuit of their dissertation.

Program Requirements

Master's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Doctoral qualifying exams (both written comprehensive and oral area exams)
Annual review
Dissertation committee formation
Dissertation proposal

Dissertation defense

General Requirements

Code	Title	Hours
Recommended Courses (semester hours can be counted toward course work component with advisor approval)		
MEIE 6830	Graduate Traineeship I (Technical Writing and Communications) (2 SHs)	
MEIE 6860	Graduate Traineeship II (Research Ethics and Professional Development) (2 SHs)	
Approved Course Work		
Requires 20 semester hours of course work, including up to 4 semester hours of Independent Study (IE 7978). Please consult your faculty advisor for acceptable courses.		20

Dissertation Courses

Code	Title	Hours
Complete the following (repeatable) course twice. Must register in two consecutive semesters (may include full summer term):		
ME 9990	Dissertation	

Program Credit/GPA Requirements

20 total semester hours required
Minimum 3.000 GPA required

Mechanical Engineering, PhD

Requirements

The PhD is awarded to students who demonstrate high academic achievement and research competence in the fields of mechanical engineering. To earn a PhD, a student must complete an approved, rigorous program of advanced course work and submit and defend an original dissertation of independent research. The Department of Mechanical and Industrial Engineering (MIE) expects all successful doctoral candidates to show depth of knowledge and research innovation in their chosen field of specialization.

The MIE department admits applicants to the PhD program either directly after earning a suitable bachelor's degree (i.e., direct entry) or after earning a master's degree (i.e., advanced entry). Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral exams) as well as all the required course work.

Academic and Research Advisors

PhD students must find a research advisor within their first year of study. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Students are advised by the academic advisor of their discipline before they select their research advisor(s).

Change of Research Advisor

Students who wish to change their research advisor need to use the MIE petition form to make that request. The petition form must be signed by the student and by the student's current and future research advisor. The

signed petition form should then be submitted to the MIE department for further processing.

Course Requirements and Plan of Study

A typical program of study includes at least 40 semester hours of course work beyond a bachelor's degree. Students who choose to get a master's degree along the way to a PhD must complete a total of 52 semester hours (32 semester hours to earn a master's degree and an additional 20 semester hours in order to earn a PhD). The 32 semester hours of course work that apply toward the master's degree may include up to 8 semester hours of thesis or 4 semester hours of project or approved independent study course work. Students may petition the MIE Graduate Affairs Committee to substitute up to 4 semester hours of Independent Study (ME 7978) as part of their required course work. An independent study must be approved by the research advisor. When thesis or project is selected, an independent study course cannot be taken.

Each doctoral student, together with his or her research advisor, should develop an initial program during the first semester of study. The final program is also subject to the approval of the dissertation committee, who will add the program of study to the student's record upon admission to doctoral candidacy.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

PhD Students Annual Review

All PhD students in the MIE department must complete the PhD Students Annual Review form and submit the required documents by no later than January 31st of their third year of study (second year for PhD advanced entry) and all subsequent years thereafter.

PhD Candidacy

To qualify as a doctoral candidate, a doctoral student must successfully complete the doctoral qualifying examinations (both a written comprehensive exam and an oral exam—see below) as well as all the required course work.

Doctoral Qualifying Examinations

Background and motivation: To demonstrate breadth and depth in each of the subject exams, crossover and merging exams are necessary in an effort to provide students with an opportunity to master the core disciplines in mechanical or industrial engineering (at both undergraduate and graduate levels) along with a focus area of importance to their specialization. These exams also provide an assessment as to whether students have adequate knowledge to pursue advanced study and possess attributes of a doctoral candidate by demonstrating understanding of and the ability to apply fundamental principles. Also, an oral exam tied to the written exams is necessary in an effort to evaluate a student's potential to perform independent research in the chosen field of specialization for the doctoral program.

Doctoral qualifying examinations framework: The doctoral qualifying examinations consist of the following two parts:

1. Two **written comprehensive** exams, which are respectively referred to as exam A and exam B

2. An **oral** exam to be administered no later than the end of the semester in which the written exams are taken and passed

WRITTEN COMPREHENSIVE EXAMINATIONS

All doctoral students admitted directly with a bachelor's degree must take the written comprehensive exams no later than the first time that it is offered after their first two years of study. The written comprehensive exams include two exams, **exam A** and **exam B**, and are given on Thursday and Friday of the first week of classes during regular semesters. A complete list of these exams along with topical coverage and details are provided on the MIE department graduate website (<http://www.mie.neu.edu/mie/degrees-programs/graduate-studies>). Students should also consult extensively with their research advisor regarding all aspects of the qualifying exams.

Written Comprehensive Exams Rules

Exam A, about four to six hours in length, should be selected from the list of major exams based on the student's concentration (i.e., materials, mechanics, mechatronics, or thermofluids, see below). No deviation from this rule will be permitted. As listed below, exam B, about one to two hours in length, should be selected from the list of exams B for PhD degree program in industrial engineering (see below). Only one exam from this list should be selected. All students are required to have their research advisor's approval on selection of exam B prior to registering to take the written comprehensive exams. Note that exam B cannot be similar or close to one of the topics covered in exam A.

List of exams A and B based on student's research concentration:

Exams A for Mechanical Engineering PhD Students (select one Exam A):

- **Materials Science Engineering (MSE):** Kinetics of Materials (MSE1), Thermodynamics of Materials (MSE2); and Process, Structure, Property, and Performance of Materials (MSE3)
- **Mechanics (MEC):** Mechanics of Deformable Media (MEC1), Dynamics and Vibration (MEC2), and Finite Element Method (MEC3)
- **Dynamic Systems and Control (DSC):** Dynamic Systems (DSC1); Mechanical Vibrations (DSC2); and Control Systems (DSC3)
- **Thermofluids Science (TFS):** Thermodynamics (TFS1); Fluid Mechanics (TFS2); and Heat Transfer (TFS3)

Sample Exams B for Mechanical Engineering PhD Students (select one Exam B):

- Control Systems (DSC3)
- Dynamic Systems (DSC1)
- Dynamics and Vibration (MEC2)
- Engineering Mathematics (MTH)
- Finite Element Method (MEC3)
- Fluid Mechanics (TFS2)
- Heat Transfer (TFS3)
- Kinetics of Materials (MSE1)
- Mechanics of Deformable Media (MEC1)
- Process, Structure, Property, and Performance of Materials (MSE3)
- Thermodynamics (TFS1)
- Thermodynamics of Materials (MSE2)

ORAL EXAMINATION

The objective of the oral exam is to assess a student's potential to perform independent research in the chosen field of specialization. This exam shall be administered no later than the end of the semester in which the written exams are taken and passed. The exam shall be

publicly advertised at least one week in advance and all faculty members and students may attend and participate.

Oral examination procedure: The student's research advisor convenes and chairs an oral examination committee comprised of a minimum of three faculty members deemed appropriate by the research advisor. This committee provides a set of technical papers pertinent to the student's research area at least one month before the examination. The oral examination committee will then conduct the exam that comprises the following two parts (both completed in a one-hour session):

1. A 30-minute oral presentation on a selected number of papers out of the assigned technical papers
2. A 30-minute oral exam by committee members' questions and evaluation of the student covering topics specifically related to the student's research area

GRADING PROCEDURE

Grading procedure and results of the written comprehensive examination:

The MIE Graduate Affairs Committee will review all students' performance in the written comprehensive exams. Depending on the results of both major and minor exams and in consultation with the student's research advisor, the Graduate Affairs Committee will recommend one of the following three possible options:

1. No invitation to oral exam: The student will be dismissed from the program. He or she may be granted a master's degree if the requirements are already met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).
2. No invitation to oral exam yet: The student will be asked to retake the written exam(s) again in the next offering and/or take additional courses.
3. Student is invited to oral exam.

The Graduate Affairs Committee makes its final recommendation considering all aspects of the exam including, but not limited to, examiners' reports and results, student's research performance, and course work. The Graduate Affairs Committee reserves the right to recommend option 1 above for students who register for the exams but do not show up.

Grading procedure and results of the oral examination: If the student's performance in the oral exam is not satisfactory, the student will be dismissed from the program. He or she may be granted a master's degree if the requirements are met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).

Upon successfully passing the oral exam, the student continues in the PhD program. Upon passing all the required course work, he or she will become a PhD candidate. The results of written and oral exams and any recommended course work will become part of the student's record.

APPEAL PROCEDURE

The preliminary qualifying examination process provides means for reevaluation for students who fail one or more exams to appeal the Graduate Affairs Committee decision. All communications related to these examinations should be coordinated through the student's research advisor. Only the student's research advisor may request the MIE Graduate Affairs Committee to reevaluate the student's failed exams using the appeal form found at the link (<http://www.coe.neu.edu/sites/default/files/pdfs/coe/gse/miepetitionform.pdf>).

PhD Students Changing Their Program

PhD students who, for any reason, decide to change their degree program (i.e., from PhD in ME to PhD in IE or vice versa) must take (or retake) the doctoral qualifying examinations (both written comprehensive exams and oral exam) based on the student's new major research area (i.e., industrial engineering, materials, mechanics, mechatronics, or thermofluids).

Interdisciplinary PhD Students with MIE as the Home Department

Students pursuing the College of Engineering (COE) interdisciplinary PhD program with the MIE department as their home department must take one of the major written comprehensive exams (exam A) of the MIE doctoral qualifying examinations. The minor exam (exam B) can be substituted with appropriate exam(s) from other department(s) involved with the student's interdisciplinary PhD program. Students dismissed from the ME or IE PhD programs in the MIE department cannot enroll in the PhD Interdisciplinary Engineering program with MIE as the primary affiliation.

Dissertation Proposal Preparation and Presentation Timing

Students must present their dissertation proposal no more than 12 months after successfully completing the oral exam. In addition, the presentation of the dissertation proposal and the actual dissertation defense (see below) shall be no less than 6 months apart. The student's dissertation committee will invite any additional faculty deemed appropriate to that field; this dissertation committee will then conduct the dissertation proposal session. Each student's dissertation committee must be comprised of at least three members, including the research advisor. At least two of those three members must be full-time MIE faculty members.

Dissertation Course Requirements

Upon successful completion of the doctoral qualifying examinations (both written preliminary and oral exams) as well as all the required course work, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (ME 9990). Upon completion of this sequence, the student must then register for Dissertation Continuation (ME 9996) in every semester (in each fall and spring term and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (ME 9996) until they fulfill the two-semester sequence of Dissertation (ME 9990).

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (ME 8960), can be taken if needed to fulfill the full-time course registration requirement. Candidacy Preparation—Doctoral (ME 8960) is an individual instruction course, billed as one semester hour, and graded S or U. Candidacy Preparation—Doctoral (ME 8960) does not have any course content, and students must register in a section for which their research or academic advisor is listed as the "instructor."

Final Oral (Dissertation Defense) Examination

All doctoral candidates must pass a final oral exam. This exam will be scheduled once the dissertation committee agrees that the candidate's research is at a stage where it is appropriate for formal presentation and after completion of all other PhD requirements, including all the course work approved in the final program of study. The objective of the exam is for the candidate to present and defend the results of the dissertation research and to demonstrate depth of knowledge and

significant expertise in the area of that research under questioning from the dissertation committee and other attendees.

The exam shall be publicly advertised at least one week in advance and all faculty members may attend and participate. At the conclusion of the presentation and subsequent questions period, the dissertation committee will convene to determine the outcome. The committee may recommend that the candidate be awarded the PhD or may require additional research and/or modifications of the dissertation. In some cases, candidates may be asked to present an additional final oral dissertation defense.

Residency Requirement

After achieving PhD candidacy, the university residency requirement is satisfied by two semesters of full-time graduate registration or four semesters of part-time graduate registration. Students must be continually enrolled during the pursuit of dissertation.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Doctoral qualifying exams (both written comprehensive and oral area exams)

Annual review

Dissertation committee formation

Dissertation proposal

Dissertation defense

Core Requirements

Code	Title	Hours
Recommended Courses (semester hours can be counted toward course work component with advisor approval)		

MEIE 6830 Graduate Traineeship I (Technical Writing and Communications) (2 SHs)

MEIE 6860 Graduate Traineeship II (Research Ethics and Professional Development) (2 SHs)

Approved Course Work

Requires 40 semester hours of course work, including up to 4 semester hours of Independent Study (ME 7978). Students who choose to get an MS degree along the way to a PhD must complete a total of 52 semester hours (32 semester hours toward the sought MS degree and 20 semester hours beyond the earned MS degree). The 32 semester hours applied toward the master's degree may include up to 8 semester hours of MS Thesis or 4 semester hours of MS Project or approved independent study course work. Please consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice. Must register in two consecutive semesters (may include full summer term):		
ME 9990	Dissertation	

Program Credit/GPA Requirements

40 total semester hours required

Minimum 3.000 GPA required

Mechanical Engineering, PhD—Advanced Entry

Requirements

The PhD is awarded to students who demonstrate high academic achievement and research competence in the fields of mechanical engineering. To earn a PhD, a student must complete an approved, rigorous program of advanced course work and submit and defend an original dissertation of independent research. The Department of Mechanical and Industrial Engineering (MIE) expects all successful doctoral candidates to show depth of knowledge and research innovation in their chosen field of specialization.

The MIE department admits applicants to the PhD program either directly after earning a suitable bachelor's degree (i.e., direct entry) or after earning a master's degree (i.e., advanced entry). Upon acceptance into the program, an applicant is designated as a doctoral student. This designation is changed to doctoral candidate upon successful completion of the doctoral qualifying examinations (both written and oral exams) as well as all the required course work.

Academic and Research Advisors

PhD students must find a research advisor within their first year of study. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Students are advised by the academic advisor of their discipline before they select their research advisor(s).

Change of Research Advisor

Students who wish to change their research advisor need to use the MIE petition form to make that request. The petition form must be signed by the student and by the student's current and future research advisor. The signed petition form should then be submitted to the MIE department for further processing.

Course Requirements and Plan of Study

A typical program of study includes at least 20 semester hours of course work beyond a master's degree. Students may petition the MIE Graduate Affairs Committee to substitute up to 4 semester hours of Independent Study (ME 7978) as part of their required course work. An independent study must be approved by the research advisor.

Each doctoral student, together with his or her research advisor, should develop an initial program during the first semester of study. The final program is also subject to the approval of the dissertation committee, who will add the program of study to the student's record upon admission to doctoral candidacy.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

PhD Students Annual Review

All PhD students in MIE department must complete the PhD Students Annual Review form and submit the required documents by no later than

January 31st of their second year of study (third year for PhD direct entry) and all subsequent years thereafter.

PhD Candidacy

To qualify as a doctoral candidate, a doctoral student must successfully complete the doctoral qualifying examinations (both a written comprehensive exam and an oral exam—see below) as well as all the required course work.

Doctoral Qualifying Examinations

Background and motivation: To demonstrate breadth and depth in each of the subject exams, crossover and merging exams are necessary in an effort to provide students with an opportunity to master the core disciplines in mechanical or industrial engineering (at both undergraduate and graduate levels) along with a focus area of importance to their specialization. These exams also provide an assessment as to whether students have adequate knowledge to pursue advanced study and possess attributes of a doctoral candidate by demonstrating understanding of and the ability to apply fundamental principles. Also, an oral exam tied to the written exams is necessary in an effort to evaluate a student's potential to perform independent research in the chosen field of specialization for the doctoral program.

Doctoral qualifying examinations framework: The doctoral qualifying examinations consist of the following two parts:

1. Two **written comprehensive** exams, which are respectively referred to as exam A and exam B
2. An **oral** exam to be administered no later than the end of the semester in which the written exams are taken and passed

WRITTEN COMPREHENSIVE EXAMINATIONS

All doctoral students admitted directly with a bachelor's degree must take the written comprehensive exams no later than the first time that it is offered after their first two years of study. The written comprehensive exams include two exams, **exam A** and **exam B**, and are given on Thursday and Friday of the first week of classes during regular semesters. A complete list of these exams along with topical coverage and details are provided on the MIE department graduate website (<http://www.mie.neu.edu/mie/degrees-programs/graduate-studies>). Students should also consult extensively with their research advisor regarding all aspects of the qualifying exams.

Written Comprehensive Exams Rules

Exam A, about four to six hours in length, should be selected from the list of major exams based on the student's concentration (i.e., materials, mechanics, mechatronics, or thermofluids, see below). No deviation from this rule will be permitted. As listed below, exam B, about one to two hours in length, should be selected from the list of exams B for PhD degree program in industrial engineering (see below). Only one exam from this list should be selected. All students are required to have their research advisor's approval on selection of exam B prior to registering to take the written comprehensive exams. Note that exam B cannot be similar or close to one of the topics covered in exam A.

List of exams A and B based on student's research concentration:

Exams A for Mechanical Engineering PhD Students (select one Exam A):

- **Materials Science Engineering (MSE):** Kinetics of Materials (MSE1), Thermodynamics of Materials (MSE2); and Process, Structure, Property, and Performance of Materials (MSE3)
- **Mechanics (MEC):** Mechanics of Deformable Media (MEC1), Dynamics and Vibration (MEC2), and Finite Element Method (MEC3)

- **Dynamic Systems and Control (DSC):** Dynamic Systems (DSC1); Mechanical Vibrations (DSC2); and Control Systems (DSC3)
- **Thermofluids Science (TFS):** Thermodynamics (TFS1); Fluid Mechanics (TFS2); and Heat Transfer (TFS3)

Sample Exams B for Mechanical Engineering PhD Students (select one Exam B):

- Control Systems (DSC3)
- Dynamic Systems (DSC1)
- Dynamics and Vibration (MEC2)
- Engineering Mathematics (MTH)
- Finite Element Method (MEC3)
- Fluid Mechanics (TFS2)
- Heat Transfer (TFS3)
- Kinetics of Materials (MSE1)
- Mechanics of Deformable Media (MEC1)
- Process, Structure, Property, and Performance of Materials (MSE3)
- Thermodynamics (TFS1)
- Thermodynamics of Materials (MSE2)

ORAL EXAMINATION

The objective of the oral exam is to assess a student's potential to perform independent research in the chosen field of specialization. This exam shall be administered no later than the end of the semester in which the written exams are taken and passed. The exam shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate.

Oral examination procedure: The student's research advisor convenes and chairs an oral examination committee comprised of a minimum of three faculty members deemed appropriate by the research advisor. This committee provides a set of technical papers pertinent to the student's research area at least one month before the examination. The oral examination committee will then conduct the exam that comprises the following two parts (both completed in a one-hour session):

1. A 30-minute oral presentation on a selected number of papers out of the assigned technical papers
2. A 30-minute oral exam by committee members' questions and evaluation of the student covering topics specifically related to the student's research area

GRADING PROCEDURE

Grading procedure and results of the written comprehensive examination:

The MIE Graduate Affairs Committee will review all students' performance in the written comprehensive exams. Depending on the results of both major and minor exams and in consultation with the student's research advisor, the Graduate Affairs Committee will recommend one of the following three possible options:

1. No invitation to oral exam: The student will be dismissed from the program. He or she may be granted a master's degree if the requirements are already met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).
2. No invitation to oral exam yet: The student will be asked to retake the written exam(s) again in the next offering and/or take additional courses.
3. Student is invited to oral exam.

The Graduate Affairs Committee makes its final recommendation considering all aspects of the exam including, but not limited to,

examiners' reports and results, student's research performance, and course work. The Graduate Affairs committee reserves the right to recommend option 1 above for students who register for the exams but do not show up.

Grading procedure and results of the oral examination: If the student's performance in the oral exam is not satisfactory, the student will be dismissed from the program. He or she may be granted a master's degree if the requirements are met; otherwise, the student may continue to fulfill the requirements for a master's degree in industrial engineering (IE), mechanical engineering (ME), or operations research (OR).

Upon successfully passing the oral exam, the student continues in the PhD program and upon passing all the required course work, he or she will become a PhD candidate. The results of written and oral exams and any recommended course work will become part of the student's record.

APPEAL PROCEDURE

The preliminary qualifying examination process provides means for reevaluation for students who fail one or more exams to appeal the Graduate Affairs Committee decision. All communications related to these examinations should be coordinated through the student's research advisor. Only the student's research advisor may request the MIE Graduate Affairs Committee to reevaluate the student's failed exams using the appeal form found at the link (<http://www.coe.neu.edu/sites/default/files/pdfs/coe/gse/miepetitionform.pdf>).

PhD Students Changing Their Program

PhD students who, for any reason, decide to change their program (i.e., from PhD in ME to PhD in IE or vice versa) must take (or retake) the doctoral qualifying examinations (both written comprehensive exams and oral exam) based on the student's new major research area (i.e., industrial engineering, materials, mechanics, mechatronics, or thermofluids).

Interdisciplinary PhD Students with MIE as the Home Department

Students pursuing the College of Engineering (COE) interdisciplinary PhD program with the MIE department as their home department must take one of the major written comprehensive exams (exam A) of the MIE doctoral qualifying examinations. The minor exam (exam B) can be substituted with appropriate exam(s) from other department(s) involved with the student's interdisciplinary PhD program. Students dismissed from the ME or IE PhD programs in the MIE department cannot enroll in the PhD Interdisciplinary Engineering program with MIE as the primary affiliation.

Dissertation Proposal Preparation and Presentation Timing

Students must present their dissertation proposal no more than 12 months after successfully completing the oral exam. In addition, the presentation of the dissertation proposal and the actual dissertation defense (see below) shall be no less than 6 months apart. The student's dissertation committee will invite any additional faculty deemed appropriate to that field; this dissertation committee will then conduct the dissertation proposal session. Each student's dissertation committee must be comprised of at least three members, including the research advisor. At least two of those three members must be full-time MIE faculty members.

Dissertation Course Requirements

Upon successful completion of the doctoral qualifying examinations (both written preliminary and oral exams) as well as all the required course work, the doctoral candidate, in consultation with his or her research advisor, must register in two consecutive semesters (may include full summer term) for Dissertation (ME 9990). Upon completion

of this sequence, the student must then register for Dissertation Continuation (ME 9996) in every semester (in each fall and spring term and also in the summer term if summer is the student's last semester) until the dissertation is completed. Students may not register for Dissertation Continuation (ME 9996) until they fulfill the two-semester Dissertation (ME 9990) registration sequence.

To meet the full-time registration requirement for PhD students who have completed the majority of their course work and not yet reached PhD candidacy, a zero-credit course, Candidacy Preparation—Doctoral (ME 8960), can be taken if needed to meet full-time course registration requirements. This course is an individual instruction course, billed at 1 semester hour, and graded as S or U. Candidacy Preparation—Doctoral (ME 8960) does not have any course content, and students must register in a section for which their research or academic advisor is listed as the "instructor" in the online course registration system.

Final Oral (Dissertation Defense) Examination

All doctoral candidates must pass a final oral exam. This exam will be scheduled once the dissertation committee agrees that the candidate's research is at a stage where it is appropriate for formal presentation and after completion of all other requirements for the PhD, including all course work approved in the final program of study. The objective of the exam is for the candidate to present and defend the results of the dissertation research and to demonstrate depth of knowledge and significant expertise in the area of that research under questioning from the dissertation committee and other attendees.

The exam shall be publicly advertised at least one week in advance and all faculty members may attend and participate. At the conclusion of the presentation and subsequent questions period, the dissertation committee will convene to determine the outcome. The committee may recommend that the candidate be awarded the PhD or may require additional research and/or modifications of the dissertation. In some cases, candidates may be asked to present an additional final oral dissertation defense.

Residency Requirement

After achieving PhD candidacy, the university residency requirement is satisfied by two semesters of full-time graduate registration or four semesters of part-time graduate registration. Students must be continually enrolled during the pursuit of their dissertation.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Doctoral qualifying exams (both written comprehensive and oral area exams)
Annual review
Dissertation committee formation
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
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Recommended Courses (semester hours can be counted toward course work component with advisor approval)

MEIE 6830	Graduate Traineeship I (Technical Writing and Communications) (2 SHs)	
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MEIE 6860	Graduate Traineeship II (Research Ethics and Professional Development) (2 SHs)	
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Approved Course Work

Requires 20 semester hours of course work, including up to 4 semester hours of Independent Study (ME 7978). Please consult your faculty advisor for acceptable courses. 20

Dissertation

Code	Title	Hours
ME 9990	Dissertation	

Complete the following (repeatable) course twice. Must register in two consecutive semesters (may include full summer term):

Program Credit/GPA Requirements

20 total semester hours required

Minimum 3.000 GPA required

Data Analytics Engineering, MS

The Department of Mechanical and Industrial Engineering (MIE) offers the Master of Science in Data Analytics Engineering in order to meet the current and projected demand for a workforce trained in analytics. This degree program offers students an opportunity to train for industry jobs or to acquire rigorous analytical skills and research experience to prepare for a doctoral program in health, security, and sustainability at Northeastern University. While the core courses for this program are offered by the College of Engineering, elective courses can be chosen from diverse disciplines spread across various colleges at Northeastern. The MS degree in data analytics engineering is designed to enable the graduating students to address the growing need for professionals who are trained in advanced data analytics and can transform large streams of data into understandable and actionable information for the purpose of making decisions. The key sectors that require analytics professionals include healthcare, smart manufacturing, supply chain and logistics, national security, defense, banking, finance, marketing, and human resources.

The Master of Science in Data Analytics Engineering is designed to help students acquire knowledge and skills to:

- Discover opportunities to improve systems, processes, and enterprises through data analytics
- Apply optimization, statistical, and machine-learning methods to solve complex problems involving large data from multiple sources
- Collect and store data from a variety of sources, including Internet of Things (IoT), an integrated network of devices and sensors, customer touch points, processes, social media, and people
- Work with technology teams to design and build large and complex SQL databases
- Use tools and methods for data mining, big-data algorithms, and data visualization to generate reports for analysis and decision making
- Create integrated views of data collected from multiple sources of an enterprise
- Understand and explain results of data analytics to decision makers
- Design and develop analytics projects

This degree program seeks to prepare students for a comprehensive list of tasks including collecting, storing, processing, and analyzing data; reporting statistics and patterns; drawing conclusions and insights; and making actionable recommendations.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science degree in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the Program Requirements tab. Students may pursue any master's program either on a full-time or part-time basis; however, certain restrictions may apply.

Specific Degree Requirements

Core courses for the MS in data analytics engineering provide students with a foundation in operations research, statistics, data and knowledge engineering, and visualization. Students can select electives from a wide range of fields including business, engineering, healthcare, manufacturing, and urban communities/cities. These courses are designed to provide students with a strong understanding of probability and statistics, optimization methods, data mining, database design, and visualization. Elective courses provide students with the knowledge and understanding of descriptive, prescriptive, diagnostic, and predictive analytics as applied to a specific field of interest such as business, healthcare, manufacturing, and urban communities/cities. Alternatively, students can select their electives so that they can prepare for a doctoral program by taking advanced courses in mathematics, statistics, machine learning, and pattern recognition.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students are advised by the academic advisor designated for their respective concentration or program. Students doing thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE graduate affairs committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis option students are advised by the academic advisor designated for their concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The

PS may be modified at any time as students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of the academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE graduate affairs committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can choose the project option by taking Master's Project (ME 7945) or Master's Project (IE 7945). An MS project must be petitioned to the MIE graduate affairs committee and approved by both the faculty member (instructor for Master's Project) and the student's academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing the course work option may petition the MIE graduate affairs committee to substitute up to a 4-semester-hour Independent Study (ME 7978) or Independent Study (IE 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study. When taking thesis or project options, the independent study course cannot be taken.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options: course work only, project, research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance, and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as "thesis readers" to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE graduate affairs committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a graduate degree program in the College of Engineering have the opportunity to pursue an engineering graduate certificate in addition to or in combination with the MS degree. For more information please refer to Graduate Certificate Programs (p. 229). Please note that students pursuing the Master of Science in Data

Analytics Engineering are not eligible for the Graduate Certificate in Data Mining.

GORDON INSTITUTE OF ENGINEERING LEADERSHIP Master's Degree in Data Analytics Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Data Analytics Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 40-semester-hour degree and certificate will require 24 hours of advisor-approved data analytics technical courses.

Engineering Leadership (p. 222)

ENGINEERING BUSINESS Master's Degree in Data Analytics Engineering with Graduate Certificate in Engineering Business

Students may complete a Master of Science in Data Analytics Engineering in addition to earning a Graduate Certificate in Engineering Business. Students must apply and be admitted to the Galante Engineering Business Program in order to pursue this option. The program requires the applicant to have earned or be in a program to earn a Bachelor of Science in Engineering from Northeastern University. The integrated 32-semester-hour degree and certificate will require 16 semester hours of the data analytics engineering core courses and 16 semester hours from the outlined business-skill curriculum. The course work, along with participation in cocurricular professional development elements, earn the Graduate Certificate in Engineering Business.

Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
IE 5374	Special Topics in Industrial Engineering (Data Visualization Engineering)	4
IE 6200	Engineering Probability and Statistics	4
IE 7275	Data Mining in Engineering	4
IE 7280	Statistical Methods in Engineering	4
INFO 6210	Data Management and Database Design	4
OR 6205	Deterministic Operations Research	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
	Complete 8 semester hours from the course list below.	8

PROJECT OPTION

Code	Title	Hours
ME 7945	Master's Project	4
Complete 4 semester hours from the course list below.		4

THESIS OPTION

Code	Title	Hours
ME 7990	Thesis ¹	8

Course List

Code	Title	Hours
Business Administration		
BUSN 6320	Business Analytics Fundamentals	1
BUSN 6324	Predictive Analytics for Managers	1
BUSN 6336	Data Mining for Managers	1
BUSN 6340	Modeling for Business Analytics for Managers	1
Civil Engineering and Environmental Engineering		
CIVE 7100	Time Series and Geospatial Data Sciences	4
CIVE 7342	System Identification	4
Computer Science		
CS 5002	Discrete and Data Structures	4
CS 5004	Object-Oriented Design	4
CS 5006	Algorithms	2
CS 5100	Foundations of Artificial Intelligence	4
CS 5150	Game Artificial Intelligence	4
CS 5200	Database Management Systems	4
CS 5310	Computer Graphics	4
CS 5335	Robotic Science and Systems	4
CS 5330	Pattern Recognition and Computer Vision	4
CS 5800	Algorithms	4
CS 6120	Natural Language Processing	4
CS 6140	Machine Learning	4
CS 6200	Information Retrieval	4
CS 6220	Data Mining Techniques	4
Computer Systems Engineering		
CSYE 7250	Big Data Architecture and Governance	4
Criminal Justice		
CRIM 7718	Advanced Data Analysis	4
Data Science		
DS 5010	Introduction to Programming for Data Science	4
DS 5020	Introduction to Linear Algebra and Probability for Data Science	4
DS 5110	Introduction to Data Management and Processing	4
DS 5220	Supervised Machine Learning and Learning Theory	4
DS 5230	Unsupervised Machine Learning and Data Mining	4
Electrical and Computer Engineering		
EECE 5155	Wireless Sensor Networks and the Internet of Things	4
EECE 5639	Computer Vision	4

EECE 5644	Introduction to Machine Learning and Pattern Recognition	4
EECE 7204	Applied Probability and Stochastic Processes	4
EECE 7312	Statistical and Adaptive Signal Processing	4
EECE 7397	Advanced Machine Learning	4
Engineering Management		
EMGT 5220	Engineering Project Management	4
EMGT 6225	Economic Decision Making	4
EMGT 6305	Financial Management for Engineers	4
Health Informatics		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5102	Data Management in Healthcare	3
HINF 5200	Theoretical Foundations in Personal Health Informatics	4
HINF 5301	Personal Health Technologies: Field Deployment and System Evaluation	4
HINF 6202	Business of Healthcare Informatics	3
HINF 6240	Improving the Patient Experience through Informatics	3
HINF 6335	Management Issues in Healthcare Information Technology	3
HINF 6400	Introduction to Health Data Analytics	3
Industrial Engineering		
IE 5374	Special Topics in Industrial Engineering (Spreadsheet Modeling for industrial Engineering)	4
IE 5400	Healthcare Systems Modeling and Analysis	4
IE 5630	Biosensor and Human Behavior Measurement	4
IE 6300	Manufacturing Methods and Processes	4
IE 7200	Supply Chain Engineering	4
IE 7215	Simulation Analysis	4
IE 7285	Statistical Quality Control	4
IE 7290	Reliability Analysis and Risk Assessment	4
Information Systems		
INFO 6101	Data Science Engineering with Python	4
INFO 6205	Program Structure and Algorithms	4
INFO 6215	Business Analysis and Information Engineering	4
INFO 7275	Advanced Database Management Systems	4
INFO 7290	Data Warehousing and Business Intelligence	4
INFO 7330	Information Systems for Healthcare-Services Delivery	4
INFO 7390	Advances in Data Sciences and Architecture	4
INFO 7610	Special Topics in Natural Language Engineering Methods and Tools	4
Mathematics		
MATH 5131	Introduction to Mathematical Methods and Modeling	4

MATH 7234	Optimization and Complexity	4
MATH 7241	Probability 1	4
MATH 7340	Statistics for Bioinformatics	4
MATH 7341	Probability 2	4
MATH 7342	Mathematical Statistics	4
MATH 7343	Applied Statistics	4
MATH 7344	Regression, ANOVA, and Design	4
MATH 7345	Nonparametric Methods in Statistics	4
MATH 7346	Time Series	4

Mechanical Engineering

ME 6201	Mathematical Methods for Mechanical Engineers 2	4
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	4

Operations Research

OR 6205	Deterministic Operations Research	4
OR 7230	Probabilistic Operation Research	4
OR 7235	Inventory Theory	4
OR 7240	Integer and Nonlinear Optimization	4
OR 7245	Network Analysis and Advanced Optimization	4
OR 7310	Logistics, Warehousing, and Scheduling	4
OR 7440	Operations Research Engineering Leadership Challenge Project 1	4

Physics

PHYS 5116	Complex Networks and Applications	4
PHYS 7331	Network Science Data	4
PHYS 7332	Network Science Data 2	4

Public Policy and Urban Affairs

PPUA 5261	Dynamic Modeling for Environmental Decision Making	4
PPUA 5262	Big Data for Cities	4
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
PPUA 7237	Advanced Spatial Analysis of Urban Systems	4

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

¹ A thesis is required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship. The thesis topic should cover one or more of the areas from statistics, mathematics, optimization, data mining, machine learning, database design, big data, visualization tools, or forecasting methods. The thesis should train students for research in data and operations analytics and/or prepare them for a doctoral program.

Robotics, MS**Program Requirements**

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
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Mechanical Engineering

Complete one of the following: 4

ME 5659	Control Systems Engineering
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ME 5250	Robot Mechanics and Control
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Electrical and Computer Engineering

Complete one of the following: 4

EECE 5698	Special Topics in Electrical and Computer Engineering
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EECE 5698	Special Topics in Electrical and Computer Engineering
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Computer Science

Complete one of the following: 4

CS 5335	Robotic Science and Systems
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CS	(TBA)
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Concentrations

Complete one of the following concentrations:

- Mechanical Engineering (p. 195)
- Electrical and Computer Engineering (p. 195)
- Computer Science (p. 196)

MECHANICAL ENGINEERING

Code	Title	Hours
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Required Course

Complete additional ME course not used to fulfill the core requirements: 4

ME 5659	Control Systems Engineering
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ME 5250	Robot Mechanics and Control
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Options

Complete one of the following options: 16

Course Work Option

Complete four of the following from the mechanical engineering course list. (p. 196)

Thesis Option

ME 7990	Thesis
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Complete two of the following from the mechanical engineering course list. (p. 196)

Project Option

ME 7945	Master's Project
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Complete three of the following from the mechanical engineering course list. (p. 196)

ELECTRICAL AND COMPUTER ENGINEERING

Code	Title	Hours
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Required Course

Complete additional EECE course not used to fulfill the core requirements: 4

EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 5698	Special Topics in Electrical and Computer Engineering	

Options

Complete one of the following options: 16

Course Work Option

Complete four of the following from the electrical and computer engineering course list. (p. 196)

Thesis Option

EECE 7990	Thesis	
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Complete two of the following from the electrical and computer engineering course list. (p. 196)

Project Option

EECE 7674	Master's Project	
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Complete three of the following from the electrical and computer engineering course list. (p. 196)

COMPUTER SCIENCE

Code	Title	Hours
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Required Course

Complete additional CS course not used to fulfill the core requirements: 4

CS 5335	Robotic Science and Systems	
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CS	(TBA)	
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Options

Complete one of the following options: 16

Course Work Option

Complete four of the following from the computer science course list. (p. 196)

Thesis Option

CS 7990	Thesis (complete twice for a total of 8 credits)	
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Complete three of the following from the computer science course list. (p. 196)

Project Option

CS 8674	Master's Project	
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Complete three of the following from the computer science course list. (p. 196)

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Course Lists**MECHANICAL ENGINEERING COURSE LIST**

Code	Title	Hours
ME 5240	Computer Aided Design and Manufacturing	
ME 5245	Mechatronic Systems	
ME 5250	Robot Mechanics and Control	
ME 5655	Dynamics and Mechanical Vibration	
ME 5659	Control Systems Engineering	
ME 6200	Mathematical Methods for Mechanical Engineers 1	

ME 6201	Mathematical Methods for Mechanical Engineers 2	
ME 7210	Elasticity and Plasticity	
ME 7247	Advanced Control Engineering	
ME 7253	Advanced Vibrations	
IE 5630	Biosensor and Human Behavior Measurement	
IE 7280	Statistical Methods in Engineering	
IE 7315	Human Factors Engineering	

ELECTRICAL AND COMPUTER ENGINEERING COURSE LIST

Code	Title	Hours
EECE 5580	Classical Control Systems	
EECE 5639	Computer Vision	
EECE 5642	Data Visualization	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
EECE 5698	Special Topics in Electrical and Computer Engineering	
EECE 7323	Numerical Optimization Methods	
EECE 7337	Information Theory	
EECE 7360	Combinatorial Optimization	
EECE 7370	Advanced Computer Vision	
EECE 7397	Advanced Machine Learning	

COMPUTER SCIENCE COURSE LIST

Code	Title	Hours
CS 5006	Algorithms	
CS 5100	Foundations of Artificial Intelligence	
CS 5330	Pattern Recognition and Computer Vision	
CS 5340	Computer/Human Interaction	
CS 6120	Natural Language Processing	
CS 6140	Machine Learning	
CS 6350	Empirical Research Methods	
CS 7140	Advanced Machine Learning	
DS 5220	Supervised Machine Learning and Learning Theory	

Industrial Engineering, MSIE

The Department of Mechanical and Industrial Engineering (MIE) offers comprehensive research and educational programs for students pursuing the Master of Science (MS) in Industrial Engineering. Industrial engineering (IE) applies mathematical modeling and analytical tools to make better decisions for designing and managing efficient and effective systems. IE is applied in many areas, including healthcare systems, supply chains, logistics and transportation engineering, manufacturing, sustainability, resilient systems, energy systems, and human-in-the loop systems. We partner with organizations ranging from startups to well-established corporations, to government and nongovernment organizations. For example, our supply chain resilience research is trying to understand and mitigate persistent drug shortages in the United States. Our research in healthcare systems engineering uses methods from lean six-sigma tools to advanced mathematical models to improve system and product reliability and optimize healthcare process quality, delays, cost, efficiency, and effectiveness—national priorities. Recent healthcare applications include improvements in

scheduling, readmissions, cost reductions, cancer care, and health services planning. We use stochastic and simulation modeling to study environmental issues related to green manufacturing, product recovery, and end-of-life management. We use data analytics for designing prognostics and preventive strategies for manufacturing operations. Our research and teaching together are designed to develop IE practitioners who can work, innovate, and excel in a variety of businesses. These extensive programs and course work allow for the selection of a degree that meets a wide variety of personal and professional goals.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science degree in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the Program Requirements tab. Also, students can complete their master's degree either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students (students doing course work or project options) are advised by the academic advisor designated for their respective concentration or program. Thesis option students must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis option students are advised by the academic advisor designated for their concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS can be modified at any time as students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of the academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can elect the project option by taking Master's Project (IE 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both the faculty member (instructor for MS Project) and the student's academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing the course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (IE 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options: course work only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find within their first year of study a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as "thesis readers" to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE graduate affairs committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a graduate degree program in the College of Engineering have the opportunity to pursue an engineering graduate certificate in addition to or in combination with the MS degree. For more information please refer to Graduate Certificate Programs (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Industrial Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Industrial Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved industrial engineering technical courses.

Engineering Leadership (p. 222)

ENGINEERING BUSINESS

Master's Degree in Industrial Engineering with Graduate Certificate in Engineering Business

Students may complete a Master of Science in Industrial Engineering in addition to earning a Graduate Certificate in Engineering Business. Students must apply and be admitted to the Galante Engineering Business Program in order to pursue this option. The program requires the applicant to have earned or be in a program to earn a Bachelor of Science in Engineering from Northeastern University. The integrated 32-semester-hour degree and certificate will require 16 semester hours of the industrial engineering core courses and 16 semester hours from the outlined business-skill curriculum. The course work, along with participation in cocurricular professional development elements, earn the Graduate Certificate in Engineering Business.

Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
IE 6200	Engineering Probability and Statistics	4
OR 6205	Deterministic Operations Research	4
Complete 8 semester hours from the following:		8
IE 5400	Healthcare Systems Modeling and Analysis	
IE 7200	Supply Chain Engineering	
IE 7215	Simulation Analysis	
IE 7315	Human Factors Engineering	
IE 7275	Data Mining in Engineering	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below.		16
Note: Other approved courses may be chosen in consultation with a faculty advisor.		

PROJECT OPTION

Code	Title	Hours
IE 7945	Master's Project	4
Complete 12 semester hours from the course list below.		12

Note: Other approved courses may be chosen in consultation with a faculty advisor.

THESIS OPTION

Code	Title	Hours
IE 7990	Thesis (required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship)	8

Complete 8 semester hours from the course list below. 8

Note: Other approved courses may be chosen in consultation with a faculty advisor.

Course List

Code	Title	Hours
Computer Systems Engineering		
CSYE 7280	User Experience Design and Testing	
Information Systems		
INFO 6101	Data Science Engineering with Python	
General Engineering		
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5100	Product Development for Engineers	
Engineering Management		
EMGT 5220	Engineering Project Management	
EMGT 5300	Engineering/Organizational Psychology	
EMGT 6225	Economic Decision Making	
EMGT 6305	Financial Management for Engineers	
Industrial Engineering		
IE 5617	Lean Concepts and Applications	
IE 5630	Biosensor and Human Behavior Measurement	
IE 6300	Manufacturing Methods and Processes	
IE 7275	Data Mining in Engineering	
IE 7280	Statistical Methods in Engineering	
IE 7285	Statistical Quality Control	
IE 7290	Reliability Analysis and Risk Assessment	
IE 7315	Human Factors Engineering	
Operations Research		
OR 7230	Probabilistic Operation Research	
OR 7235	Inventory Theory	
OR 7240	Integer and Nonlinear Optimization	
OR 7245	Network Analysis and Advanced Optimization	
OR 7310	Logistics, Warehousing, and Scheduling	

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Mechanical Engineering with Concentration in General Mechanical Engineering, MSME

While pursuing a Master of Science (MS) in Mechanical Engineering, students may choose no concentration or what is referred to as general mechanical engineering.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science degree in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing any of one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Students may pursue any program either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students are advised by the academic advisor designated for their respective concentration or program. MS students doing thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as co-advisor. Thesis option students are advised by the academic advisor of their concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS form may be modified at any time as the students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of their academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can choose project option by taking Master's Project (ME 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both the faculty member (instructor for Master's Project) and the student's academic advisor. The petition must clearly state the reason for taking the course; a brief description of

the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (ME 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options: coursework only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within the first year of their study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE graduate affairs committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Mechanical Engineering with Concentration in General Mechanical Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Mechanical Engineering with Concentration in General Mechanical Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved mechanical engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Mathematics Competency		
Complete 4 semester hours from the following:		4
ME 6200	Mathematical Methods for Mechanical Engineers 1	
ME 6201	Mathematical Methods for Mechanical Engineers 2	
Thermofluids Competency		
Complete 4 semester hours from the following:		4
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 5695	Aerodynamics	
ME 7280	Statistical Thermodynamics	
ME 7295	Multiscale Flow and Transport Phenomena	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
ME 7310	Computational Fluid Dynamics with Heat Transfer	
Mechanics/Mechatronics Combined Competency		
Complete 4 semester hours from the following:		4
EECE 5610	Digital Control Systems	
EECE 5666	Digital Signal Processing	
ME 5245	Mechatronic Systems	
ME 5250	Robot Mechanics and Control	
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
ME 5657	Finite Element Method	
ME 5659	Control Systems Engineering	
ME 7210	Elasticity and Plasticity	
ME 7238	Advanced Finite Element Method	
ME 7253	Advanced Vibrations	
Materials Competency		
Complete 4 semester hours from the following:		4
ME 5600	Materials Processing and Process Selection	
ME 5645	Environmental Issues in Manufacturing and Product Use	
or any MATL courses		

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours in the following subject areas:		16
ME, MATL, or other graduate engineering courses		

PROJECT OPTION

Code	Title	Hours
ME 7945	Master's Project	4
Electives		
Complete 12 semester hours in the following subject areas:		12
ME, MATL, or other graduate engineering courses		

THESIS OPTION

Code	Title	Hours
ME 7990	Thesis (required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship)	8
Electives		
Complete 8 semester hours in the following subject areas:		8
ME, MATL, or other graduate engineering courses		

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Mechanical Engineering with Concentration in Materials Science, MSME

While pursuing a Master of Science (MS) in Mechanical Engineering, students may choose materials science as a concentration. Materials science has been the key enabler in virtually all engineering breakthroughs that have occurred from early metal ages to the present nano age. In step with the scientific development and discovery of materials, members of the mechanical and industrial engineering (MIE) faculty are involved in interdisciplinary research to further materials processing, synthesis, and design. Research areas are aligned with Northeastern University's broad initiatives of sustainability, security, and health, as well as national initiatives in manufacturing and nanotechnology. Investigations in the areas of metals/alloys, polymers, biomaterials (including biomimetics), and composites incorporating nanoscale materials make use of experimental, theoretical, and computational techniques to tailor structure-processing-property relationships in materials for specific applications. Current areas of research include controlling synthesis and assembly processes to produce well-defined atomic structures; defect engineering; manipulating atomic/microstructures and the chemistry of materials to optimize properties for next-generation structural, electronic, and energy applications; solidification and deformation processing; and life-cycle assessments for nanocomposites/materials. Northeastern faculty and students are committed to creative thinking and engineering innovation to propel materials development to the forefront of scientific research.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science degree in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Students may pursue any program either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students (students doing project or course work options) are advised by the academic advisor designated for their respective concentration or program. MS students doing a thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis option students are advised by the academic advisor designated for their specific concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS may be modified at any time as students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of their academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can elect for project option by taking Master's Project (MATL 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both faculty member (instructor) and the academic (concentration) advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (MATL 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options: course work only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within their first year of study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE graduate affairs committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP Master's Degree in Mechanical Engineering with Concentration in Materials Science with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Mechanical Engineering with Concentration in Materials Science in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved materials science technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 16 semester hours from the following:		16
MATL 6250	Soft Matter	

MATL 6285	Structure, Properties, and Processing of Polymeric Materials
MATL 7350	Mechanical Behavior and Strengthening Mechanisms
MATL 7355	Thermodynamics of Materials
MATL 7360	Kinetics of Phase Transformations
ME 5600	Materials Processing and Process Selection
ME 5645	Environmental Issues in Manufacturing and Product Use

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Electives		
Complete 16 semester hours in the following subject areas:		16
ME, MATL, or other graduate engineering courses		

PROJECT OPTION

Code	Title	Hours
Electives		
Complete 12 semester hours in the following subject areas:		12
ME, MATL, or other graduate engineering courses		

THESIS OPTION

Code	Title	Hours
Electives		
ME 7990	Thesis ¹	8
Complete 8 semester hours in the following subject areas:		8
ME, MATL, or other graduate engineering courses		

Program Credit/GPA Requirements

32 total semester hours required

¹ Required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship.

Mechanical Engineering with Concentration in Mechanics and Design, MSME

While pursuing a Master of Science (MS) in Mechanical Engineering with Concentration in Mechanics and Design, the students will study the motion, deformation, and failure of solid materials in response to the action of direct forces and external fields. The students will also get a chance to conduct research with faculty and observe how these studies will lead to key engineering innovations and designs. Using complementary analytical, computational, experimental, and design tools, the M&D faculty members conduct research in the design and analysis of engineered functional materials/structures, in mechanics of adhesion and contact, and in biomechanics and mechanobiology. For example, in our biomechanics research, we strive to close the gap between function, form, and disease in the bone by using experimental and computational techniques; also, we explore the mechanics of lipid-based drug delivery vesicles. At the small length scales, we are creating a new understanding of nanomechanics, contact mechanics, tribology, MEMS, and the application of nanomaterials for energy storage systems. Our research and teaching together are designed to prepare students

to understand and exploit mechanics to enable their future engineering innovations.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Students may pursue any program either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students (students doing course work or project options) are advised by the academic advisor designated for their respective concentration or program. MS students doing a thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis option students are advised by the academic advisor designated for their specific concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS may be modified at any time as students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of the academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can elect for the project option by taking Master's Project

(ME 7945). A MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both the faculty member (instructor for Master’s Project) and the student’s academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (ME 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options; course work only, project, or thesis. Please see the “Program Requirements” tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within their first year of study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE Graduate Affairs Committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a master’s degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

**GORDON INSTITUTE OF ENGINEERING LEADERSHIP
Master’s Degree in Mechanical Engineering with a Concentration in Mechanics and Design with Graduate Certificate in Engineering Leadership**

Students may complete a Master of Science in Mechanical Engineering with a Concentration in Mechanics and Design in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with

multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved mechanics and design technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Mathematics Competency		
Complete 4 semester hours from the following:		4
ME 6200	Mathematical Methods for Mechanical Engineers 1	
ME 6201	Mathematical Methods for Mechanical Engineers 2	
Mechanics Competency		
Complete 12 semester hours from the following:		12
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
ME 5657	Finite Element Method	
ME 5659	Control Systems Engineering	
ME 7210	Elasticity and Plasticity	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours in the following subject areas:		16
ME, MATL, or other graduate engineering courses		

PROJECT OPTION

Code	Title	Hours
ME 7945	Master’s Project	4
Electives		
Complete 12 semester hours in the following subject areas:		12
ME, MATL, or other graduate engineering courses		

THESIS OPTION

Code	Title	Hours
ME 7990	Thesis ¹	8
Electives		
Complete 8 semester hours in the following subject areas:		8
ME, MATL, or other graduate engineering courses		

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

¹ Required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship.

Mechanical Engineering with Concentration in Mechatronics, MSME

While pursuing a Master of Science (MS) in Mechanical Engineering, students may choose mechatronics as a concentration. The term

mechatronics is a combination of the words mechanics and electronics. Mechatronics is a multidisciplinary approach to product design and development, merging the principles of electrical, mechanical, computer, material, chemical, and industrial engineering. The mechatronics and systems research cluster in the MIE department is concerned with systems that are typically composed of traditional mechanical and electrical components but are rendered "intelligent" by the incorporation of sensors, actuators, and computer control systems. Our primary focus in mechatronics and systems is on intelligent and integrated systems and machines along with their practical applications ranging from manufacturing systems and robotic platforms to biological systems. Our research and teaching together are designed to prepare students to understand and exploit mechatronics to enable their future engineering innovations.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Students may pursue any master's program either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students are advised by the academic advisor designated for their respective concentration or program. Students doing thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis-option students are advised by the academic advisor designated for their specific concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS may be modified at any time as students progress in their degree programs. However, requests for changes in the PS must be processed

before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of the academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can choose the project option by taking Master's Project (ME 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both faculty member (instructor) and the academic (concentration) advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing the course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (ME 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e. thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options; course work only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within their first year of study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE Graduate Affairs Committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP
Master's Degree in Mechanical Engineering with a Concentration in Mechatronics with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Mechanical Engineering with a Concentration in Mechatronics in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved mechatronics technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Mathematics Competency		
Complete 4 semester hours from the following:		4
ME 6200	Mathematical Methods for Mechanical Engineers 1	
ME 6201	Mathematical Methods for Mechanical Engineers 2	
ME 7205	Advanced Mathematical Methods for Mechanical Engineers	
Mechanics Competency		
Complete 4 semester hours from the following or other advisor-approved courses:		4
ME 5650	Advanced Mechanics of Materials	
ME 5655	Dynamics and Mechanical Vibration	
ME 5657	Finite Element Method	
ME 5250	Robot Mechanics and Control	
		8
Mechatronics Concentration		
ME 5245	Mechatronic Systems	
ME 5659	Control Systems Engineering	
Electrical Competency		
Complete 4 semester hours from the following or other advisor-approved courses:		4
EECE 5610	Digital Control Systems	
EECE 5666	Digital Signal Processing	
EECE 5680	Electric Drives	
EECE 5686	Electrical Machines	
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the course list.		12

PROJECT OPTION

Code	Title	Hours
ME 7945	Master's Project	4
Complete 8 semester hours from the course list.		8

THESIS OPTION

Code	Title	Hours
ME 7990	Thesis ¹	8
Complete 4 semester hours from the course list.		4

Course List

Code	Title	Hours
EECE 5606	Micro- and Nanofabrication	
EECE 5576	Wireless Communication Systems	
EECE 5686	Electrical Machines	
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication	
IE 5630	Biosensor and Human Behavior Measurement	
ME 5250	Robot Mechanics and Control	
ME 6260	Introduction to Microelectromechanical Systems (MEMS)	
ME 7247	Advanced Control Engineering	
ME 7253	Advanced Vibrations	
Or any other ME, MATL, or other graduate engineering course		

Program Credit/GPA Requirements

32 total semester hours required
 36 total semester hours required for students completing the Gordon Engineering Leadership Program in combination with the MSME degree
 Minimum 3.000 GPA required

¹ Required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship.

Mechanical Engineering with Concentration in Thermofluids, MSME

While pursuing a Master of Science (MS) in Mechanical Engineering, students may choose thermofluids as a concentration. Some of the representative research areas under this concentration may include thermodynamics, fluid dynamics, kinetic theory of gases, and thermophoresis of aerosols; microscale heat transfer phenomena and its effects on laser beam propagation; fundamentals of combustion such as burning speed and onset of auto-ignition measurement and flame stability analysis; development of chemistry reduction such as rate-controlled constrained-equilibrium method; formation and control of combustion-generated pollutants and greenhouse gases; chemistry, transport, and abatement of air pollution; alternative energy sources; combustion-based synthesis of materials; fire propagation, containment, and extinction; nonequilibrium thermodynamics; energy and gas turbine cooling technology; turbine blade cooling; and energy-related and calorimeter studies related to pharmaceutical developments. Our research and teaching together seek to prepare students to understand and exploit thermofluids to enable their future engineering innovations.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science in engineering,

science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Students may pursue any program either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students are advised by the academic advisor designated for their respective concentration or program. Students doing thesis option must find a research advisor within their first year of study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis-option students are advised by the academic advisor designated for their concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps the students manage their course work as well as helps the department to plan for requested course offerings. The PS may be modified at any time as students progress in their degree programs. However, requests for changes in PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed.

Each student's academic advisor must approve all courses prior to registration. Students may only use courses taken with the approval of the academic advisor toward the 32-semester-hour minimum requirement. However, students may petition the MIE Graduate Affairs Committee to substitute graduate-level courses from outside the approved list of electives.

Students pursuing study or research under the guidance of a faculty member can choose project option by taking Master's Project (ME 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both the faculty member (instructor for Master's Project) and the student's academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme.

Students doing course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (ME 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as the expected outcomes, deliverables, and grading scheme. Students in other options (i.e. thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options; course work only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within the first year of their study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research, teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE Graduate Affairs Committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Mechanical Engineering with a Concentration in Thermofluids with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Mechanical Engineering with a Concentration in Thermofluids in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved thermofluids technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

General Requirements

Code	Title	Hours
Required Core Courses		
ME 6200	Mathematical Methods for Mechanical Engineers 1	4
or ME 6201	Mathematical Methods for Mechanical Engineers 2	
ME 7270	General Thermodynamics	4
ME 7275	Essentials of Fluid Dynamics	4
ME 7285	Heat Conduction and Thermal Radiation	4
or ME 7290	Convective Heat Transfer	
Thermofluids Concentration Course		
Complete 4 semester hours from the following:		4
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 5695	Aerodynamics	
ME 7280	Statistical Thermodynamics	
ME 7295	Multiscale Flow and Transport Phenomena	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
ME 7310	Computational Fluid Dynamics with Heat Transfer	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the following:		12
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 5695	Aerodynamics	
ME 7280	Statistical Thermodynamics	
ME 7295	Multiscale Flow and Transport Phenomena	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
ME 7310	Computational Fluid Dynamics with Heat Transfer	
Or any ME, MATL, or other graduate engineering course		

PROJECT OPTION

Code	Title	Hours
ME 7945	Master's Project	4
Complete 8 semester hours from the following:		8
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 5695	Aerodynamics	
ME 7280	Statistical Thermodynamics	
ME 7295	Multiscale Flow and Transport Phenomena	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	

ME 7310	Computational Fluid Dynamics with Heat Transfer
Or any ME, MATL, or other graduate engineering course	

THESIS OPTION

Code	Title	Hours
ME 7990	Thesis ¹	8
Complete 4 semester hours from the following:		4
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 5695	Aerodynamics	
ME 7280	Statistical Thermodynamics	
ME 7295	Multiscale Flow and Transport Phenomena	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
ME 7310	Computational Fluid Dynamics with Heat Transfer	
Or any ME, MATL, or other graduate engineering course		

Program Credit/GPA Requirements

32 total semester hours required

36 total semester hours required for students completing the Gordon Engineering Leadership Program in combination with the MSME degree
Minimum 3.000 GPA required

¹ Required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship.

Operations Research, MSOR

The Department of Mechanical and Industrial Engineering (MIE) offers comprehensive research and educational programs for students pursuing the Master of Science (MS) in Operations Research (OR). OR deals with the application of scientific method to decision making. Its practitioners develop and solve mathematical and computer models of systems using optimization and statistical methods. OR methodologies are being used to improve efficiency, reduce costs, and increase profitability in all organizations whether in manufacturing, transportation, logistics and supply chains, healthcare, or financial institutions. Upon graduation, students who pursue this program may work in industry or may continue their studies by pursuing the PhD in Industrial Engineering. These extensive programs and course work allow for the selection of a degree that meets a wide range of personal and professional goals.

General Degree Requirements

To be eligible for admission to any of the MS degree programs, a prospective student must hold a Bachelor of Science degree in engineering, science, mathematics, or an equivalent field. Students in all master's degree programs must complete a minimum of 32 semester hours of approved course work (exclusive of any preparatory courses) with a minimum grade-point average (GPA) of 3.000. Students can complete a master's degree by pursuing one of the three tracks: course work option, project option, and thesis option. Specific degree requirements for each of these tracks can be found under the "Program Requirements" tab. Also, students can complete their master's degree either on a full-time or part-time basis; however, certain restrictions may apply.

Special Ethics Requirement

All MIE graduate students are required to complete a brief online session on Responsible Conduct of Research and Plagiarism during their first semester of full-time study. All enrolled students will be sent proper instructions on how to complete this assignment and satisfy this important requirement. The outcome of the online session will be filed with the student's records.

Academic and Research Advisors

All nonthesis students (students doing course work or project options) are advised by the academic advisor designated for their respective concentration or program. Students doing an MS thesis must find a research advisor within the first year of their study and may have thesis reader(s) at the discretion of their research advisor. The research advisor must be a full-time or jointly appointed faculty or affiliated member of the MIE department; otherwise, a petition must be filed and approved by the MIE Graduate Affairs Committee. If the research advisor is outside the MIE department, a faculty member with 50 percent or more appointments in the MIE department must be chosen as the co-advisor. Thesis option students are advised by the academic advisor designated for their specific concentration before they select their research advisor(s).

Plan of Study and Course Selection

It is recommended that all new students attend orientation sessions held by the MIE department and the Graduate School of Engineering to acquaint themselves with the course work requirements and research activities of the department as well as with the general policies, procedures, and expectations.

In order to receive proper guidance with their course work needs, all MS students are strongly encouraged to complete and submit a fully signed Plan of Study (PS) to the department before enrolling in second-semester courses. This form helps students manage their course work as well as helps the department to plan for requested course offerings. The PS may be modified at any time as the students progress in their degree programs. However, requests for changes in the PS must be processed before the requested change actually takes place. A revised PS form must also be approved and signed by the student's academic advisor.

Students pursuing study or research under the guidance of a faculty member can elect for project option by taking Master's Project (OR 7945). An MS project must be petitioned to the MIE Graduate Affairs Committee and approved by both the faculty member (instructor for MS Project) and the student's academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as expected outcomes, deliverables, and grading scheme.

Students doing course work option may petition the MIE Graduate Affairs Committee to substitute up to a 4-semester-hour Independent Study (OR 7978). An independent study must be approved by the academic advisor. The petition must clearly state the reason for taking the course; a brief description of the goals; as well as expected outcomes, deliverables, and grading scheme. Students in other options (i.e., thesis or project) are not eligible to take independent study.

Options for MS Students (course work only, project, or thesis)

Students accepted into any of the MS programs in the MIE department can choose one of the three options: course work only, project, or thesis. Please see the "Program Requirements" tab on the top menu of this page for more information. MS students who want to pursue project or thesis options must find, within their first year of study, a faculty member or a research advisor who will be willing to direct and supervise a mutually agreed research project or MS thesis. Moreover, students who receive financial support from the university in the form of a research,

teaching, or tuition assistantship must complete an 8-semester-hour thesis.

Students who complete the thesis option must make a presentation of their thesis before approval by the department. The MS thesis presentation shall be publicly advertised at least one week in advance and all faculty members and students may attend and participate. If deemed appropriate by the research advisor, other faculty members may be invited to serve as thesis readers to provide technical opinions and judge the quality of the thesis and presentation.

Change of Program/Concentration

Students enrolled in any of the MIE department programs or concentrations may change their current program or concentration no sooner than the beginning of their second full-time semester of study. In order for the program or concentration change request to be considered by the MIE Graduate Affairs Committee, the student must be in good academic standing and have completed at least 8 semester hours of required course work in their sought program at Northeastern. See here (p. 125) for instructions on how to request a program or concentration change.

Graduate Certificate Options

Students enrolled in a graduate degree program in the College of Engineering have the opportunity to pursue an engineering graduate certificate in addition to or in combination with the MS degree. For more information please refer to Graduate Certificate Programs (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Operations Research with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Operations Research in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved operations research technical courses.

Engineering Leadership (p. 222)

ENGINEERING BUSINESS

Master's Degree in Operations Research with Graduate Certificate in Engineering Business

Students may complete a Master of Science in Operations Research in addition to earning a Graduate Certificate in Engineering Business. Students must apply and be admitted to the Galante Engineering Business Program in order to pursue this option. The program requires the applicant to have earned or be in a program to earn a Bachelor of Science in Engineering from Northeastern University. The integrated 32-semester-hour degree and certificate will require 16 semester hours of the operations research core courses and 16 semester hours from the outlined business-skill curriculum. The course work, along with participation in cocurriculum professional development elements, earn the Graduate Certificate in Engineering Business.

Business Engineering (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
IE 6200 or MATH 7241	Engineering Probability and Statistics Probability 1	4
OR 7245 or MATH 7234	Network Analysis and Advanced Optimization Optimization and Complexity	4
OR 7230 or MATH 7341	Probabilistic Operation Research Probability 2	4
OR 6205	Deterministic Operations Research	4

Options

Select one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below.		16

PROJECT OPTION

Code	Title	Hours
OR 7945	Master's Project	4
Complete 12 semester hours from the course list below.		12

THESIS OPTION

Code	Title	Hours
OR 7990	Thesis (required for all students who receive financial support from the university in the form of a research, teaching, or tuition assistantship)	8
Complete 8 semester hours from the course list below.		8

Course List

Code	Title	Hours
Civil Engineering and Environmental Engineering		
CIVE 7100	Time Series and Geospatial Data Sciences	
Computer Science		
CS 5800	Algorithms	
CS 6140	Machine Learning	
CS 7805	Theory of Computation	
Computer Systems Engineering		
CSYE 7280	User Experience Design and Testing	
Data Science		
DS 5220	Supervised Machine Learning and Learning Theory	
DS 5230	Unsupervised Machine Learning and Data Mining	
General Engineering		
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5100	Product Development for Engineers	
Electrical and Computer Engineering		
EECE 5644	Introduction to Machine Learning and Pattern Recognition	

EECE 7360 Combinatorial Optimization

Engineering Management

EMGT 5220	Engineering Project Management
EMGT 5300	Engineering/Organizational Psychology
EMGT 6225	Economic Decision Making
EMGT 6305	Financial Management for Engineers

Industrial Engineering

IE 5374	Special Topics in Industrial Engineering (Data Visualization Engineering)
IE 5374	Special Topics in Industrial Engineering (Human Performance in Sociotechnical Systems)
IE 5400	Healthcare Systems Modeling and Analysis
IE 5500	Systems Engineering in Public Programs
IE 5617	Lean Concepts and Applications
IE 5630	Biosensor and Human Behavior Measurement
IE 6300	Manufacturing Methods and Processes
IE 7200	Supply Chain Engineering
IE 7215	Simulation Analysis
IE 7275	Data Mining in Engineering
IE 7280	Statistical Methods in Engineering
IE 7285	Statistical Quality Control
IE 7290	Reliability Analysis and Risk Assessment
IE 7315	Human Factors Engineering

Information Systems

INFO 6101	Data Science Engineering with Python
INFO 6210	Data Management and Database Design

Mathematics

MATH 7233	Graph Theory
MATH 7342	Mathematical Statistics
MATH 7346	Time Series
MATH 7349	Stochastic Calculus and Introduction to No-Arbitrage Finance

Operations Research

OR 7235	Inventory Theory
OR 7240	Integer and Nonlinear Optimization
OR 7310	Logistics, Warehousing, and Scheduling

Or any other IE, OR, MATH, CS, and graduate engineering courses

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Data Analytics Engineering, Graduate Certificate

The Data Analytics Engineering Graduate Certificate program focuses on fundamental concepts, tools and techniques to extract information from large data sets in order to support effective decision making. This program is designed to provide opportunities for students to master high-

demand data intelligence skills through hands-on experience on data storage, data retrieval, data visualization and prediction.

This four-course graduate certificate enables the students to apply the fundamentals of engineering knowledge and skills to database design, data pre- and post-processing for further analysis, data visualization for impactful infographics, statistical concepts for quantitative analysis and data mining techniques and algorithms for knowledge discovery.

Note: MS in Data Analytics students are not eligible for this graduate certificate.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Courses		
IE 5650		4
IE 7275	Data Mining in Engineering	4
IE 7280	Statistical Methods in Engineering	4
INFO 6210	Data Management and Database Design	4

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Data Mining Engineering, Graduate Certificate

The Graduate Certificate in Data Mining Engineering focuses on the creation of statistical and predictive models and algorithms to analyze large data sets with attention on extracting information from data sets and transforming data into structures for further analysis.

This four-course graduate certificate seeks to provide students with opportunities to apply the fundamentals of engineering knowledge and skills to data warehousing, data management, data pre- and postprocessing, development of statistical models, structures discovery, and data visualization.

Note: Master of Science in Data Analytics students are not eligible for this graduate certificate.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete three of the following:		
IE 5640	Data Mining for Engineering Applications	12
or IE 7275	Data Mining in Engineering	
INFO 5100	Application Engineering and Development	12
or CSYE 6200	Concepts of Object-Oriented Design	
INFO 6210	Data Management and Database Design	4

INFO 7390 Advances in Data Sciences and Architecture

Complete one of the following:		4
IE 7280	Statistical Methods in Engineering	4
OR 6500	Metaheuristics and Applications	

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Multidisciplinary Programs

Website (<http://www.coe.neu.edu/graduate-school/multidisciplinary>)

Tristan E. Johnson, Ph.D.

Assistant Dean of Multidisciplinary Graduate Education and Digital Learning

Suite 500 Dana Research Center
617.373.6775
617-373-2501 (fax)

The multidisciplinary graduate engineering Master of Science (MS) programs integrate engineering with the fields of technology and business by developing technical and engineering skills through advanced course work and complex technical projects. Each program focuses on the application of knowledge and skills to business and industrial settings. The multidisciplinary graduate programs blend academic and corporate experience to enable students to enhance their professional capabilities, thereby facilitating career transformation. Given an applied focus, each program provides learning opportunities to develop the skills needed to create innovative, practical, and effective solutions that can be easily applied to current professional challenges.

Graduate Certificate Options

Students enrolled in a graduate degree program in the College of Engineering have the opportunity to pursue an engineering graduate certificate in addition to or in combination with the MS degree. For more information please refer to Graduate Certificate Programs (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP OPTION

Students have the opportunity to pursue the Gordon Engineering Leadership Program (p. 221) in combination with the MS degree.

ENGINEERING BUSINESS

Students have the opportunity to pursue the Galante Engineering Business Certificate (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>) in combination with any of several MS degrees.

Programs

Master of Science in Computer Systems Engineering (MSCSE)

- Computer Systems Engineering with Concentration in the Internet of Things (p. 211)
- Computer Systems Engineering with Concentration in Software Design Engineering (p. 212)

Master of Science in Engineering Management (MSEM)

- Engineering Management (p. 213)

Master of Science in Energy Systems (MSENEs)

- Energy Systems (p. 215)
- Energy Systems—Academic Link Program (p. 217)

Master of Science in Information Systems (MSIS)

- Information Systems (p. 218)

Master of Science in Telecommunication Networks (MS)

- Telecommunication Networks (p. 219)

Graduate Certificates

- Broadband Wireless Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/broadband-wireless-systems-graduate-certificate>)
- Computer Systems Engineering (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/computer-systems-graduate-certificate>)
- Energy Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/energy-systems-graduate-certificate>)
- Energy Systems Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/energy-systems-management-graduate-certificate>)
- Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)
- Engineering Economic Decision Making (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-economic-decision-making-graduate-certificate>)
- Engineering Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-management-graduate-certificate>)
- IP Telephony Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/ip-telephony-systems-graduate-certificate>)
- Lean Six Sigma (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/lean-six-sigma-graduate-certificate>)
- Renewable Energy (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/renewable-energy-graduate-certificate>)
- Supply Chain Engineering Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/supply-chain-engineering-management-graduate-certificate>)
- Sustainable Energy Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/sustainable-energy-systems-graduate-certificate>)
- Technology Systems Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/technology-systems-management-graduate-certificate>)

Computer Systems Engineering with Concentration in the Internet of Things, MSCSE

Website (<http://www.coe.neu.edu/degrees/ms-cse-iot>)

Peter O'Reilly, PhD

Program Director
Dana Hall 5th Floor
617.373.5548

poreilly@coe.neu.edu (p.oreilly@northeastern.edu)

The Master of Science in Computer Systems Engineering with a concentration in the Internet of Things (IoT) prepares our graduates for a world of connected devices. This innovative multidisciplinary program is designed to meet the demand for a new kind of specialist, one who can engineer and develop new interactive services; acquire, fuse, and process the data collected from sensors, actuators, controllers, and other devices; and develop architectures to interconnect these elements as part of larger, more diverse systems. It is expected that careers in this rapidly evolving area will encompass industry sectors ranging from energy, healthcare, transportation, infrastructure, to manufacturing.

This concentration integrates the study of wireless networking, protocols, sensor networks, security, software development, embedded systems, data analytics, and big data to provide students with the knowledge and tools to develop IoT applications, to analyze and design IoT architectures for different application domains, and to develop data analytic tools to analyze the large amounts of data generated by the massive deployment of IoT devices.

Degree Requirements

The program requires that a mix of core required courses and elective courses be taken—16 semester hours of core course work and a minimum of 16 semester hours of elective course work. Although there are some dependencies among the core courses, the program may be started in either the fall or spring semester. The core courses in data networks and/or concepts of object oriented design may be waived only if a student can demonstrate a satisfactory knowledge of either of these topic areas. The other two core courses may not be waived.

Special topics courses, as well as other courses not in the list of electives, may be used as electives with prior approval of the program director. A maximum of two courses from the College of Computer and Information Science (CCIS) may be used as electives. Before taking any CCIS course, prior approval is required from the program director.

Independent Study (CSYE 7978), usually 1 or 2 semester hours, or Software Engineering Project (CSYE 7945) in the Internet of Things must be carried out under the supervision of a professor and must have prior approval of the program director. Proposals for independent study or a software engineering project (IoT) need to be submitted at least one month before the start of the semester.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Students may not register for more than 10 semester hours in the fall and spring terms and 4 semester hours in each of the three summer terms. Any exceptions must be approved by the program director.

Core Requirements

Code	Title	Hours
CSYE 6200	Concepts of Object-Oriented Design	4
CSYE 6510	Fundamentals of the Internet of Things	4
CSYE 6530	Connected Devices	4
TELE 5330	Data Networking	4

Electives

Code	Title	Hours
Complete four of the following. A maximum of 8 semester hours of nontechnical electives may be taken. Students may take elective course work outside these lists only with the prior approval of the program director. A maximum of 9 semester hours may be taken outside of the College of Engineering.		

Technical Electives

CSYE 6225	Network Structures and Cloud Computing	16
CSYE 6230	Operating Systems	
CSYE 7215	Foundations of Parallel, Concurrent, and Multithreaded Programming	
CSYE 7374	Special Topics in Computer Systems Engineering (Internet of Things)	
CSYE 7945	Software Engineering Project (Internet of Things)	
CSYE 7978	Independent Study (Internet of Things)	
DS 5220	Supervised Machine Learning and Learning Theory	
DS 5230	Unsupervised Machine Learning and Data Mining	
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 7390	Computer Hardware Security	
IE 5640	Data Mining for Engineering Applications	
or IE 7275	Data Mining in Engineering	
INFO 6101	Data Science Engineering with Python	
INFO 6105	Data Science Engineering Methods and Tools	
INFO 6150	Web Design and User Experience Engineering	
INFO 6205	Program Structure and Algorithms	
INFO 7290	Data Warehousing and Business Intelligence	
TELE 5360	Internet Protocols and Architecture	

Nontechnical Electives

EMGT 5220	Engineering Project Management
INFO 6660	Business Ethics and Intellectual Property for Engineers

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Computer Systems Engineering with Concentration in Software Design Engineering, MSCSE

Website (<http://www.coe.neu.edu/degrees/ms-cse>)

Kal Bugrara, PhD

Senior Program Director
Dana Hall 5th Floor
kmb@coe.neu.edu

Our computer systems engineering program takes a sociotechnical, engineering approach to software. This engineering foundation is

designed to enable students to embrace real-world complexity as a golden opportunity, especially for the more technically advanced student. We are committed to shaping our students to be intuitive problem solvers, experienced engineering architects, and result leaders who will have a great impact at the exciting three-way intersection of computer science, engineering, and ethics.

Our program offers a multitude of courses in big-data engineering and analytics in addition to supplementary courses that are required to deliver the data-analytics results in a meaningful way to management. We cover data management, advanced data management, business intelligence, column databases, data science, and big-data engineering. We offer advanced functional programming using the powerful Scala language and a course on advanced data science as well as cloud computing. Multi-thread concurrent computing is also offered as it is important for synchronizing a huge set of servers working in parallel to do large-scale analytics to make things run faster by a hundredfold increase in speed. Due to the high-level mathematical operations required to run these programs, only software engineers have the capacity to work in such complicated areas. Only they can make the necessary mathematical algorithms execute quickly enough to get the finest results.

Our engineers become fluent in data science for the sake of building the actual system. They study how to write machine-learning algorithms on top of statistical packages.

- Students study the fundamentals of logical computing formulation and program construction as well as the mathematical modeling and analysis of algorithms—an essential aspect of data science analytics.
- Students study clustering techniques, along with topic modeling and classification and logical regression techniques, as well as Bayesian statistics.
- Students study how to configure and operate a Hadoop environment (large clusters of commodity hardware) and in the process how to integrate data from diverse sources, to move and manage data through big-data platforms (in-house or in the cloud). Data ingestion, the filtering and firing of millions of operations to run over large clusters of commodity hardware, is a software-engineering technique that we teach our students how to perform through Scala, multi-threading, Spark programming, and “map-reduce” techniques.
- We show students how to make the business case for analytics projects and how to follow an execution road map that involves understanding the architectures underpinning such gigantic platforms as well as the resourcing and cost issues.

Graduate Certificate Options

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Computer Systems Engineering with Concentration in Software Design Engineering with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Computer Systems Engineering with Concentration in Software Design Engineering in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved software design engineering technical courses.

Engineering Leadership (p. 222)

Program Requirements

Core Requirements

Code	Title	Hours
Required Core		
The program does not accept any transfer credit. All 32 credits must be completed from the IS and CSYE program course work specified.		
CSYE 6200	Concepts of Object-Oriented Design	4
INFO 6205	Program Structure and Algorithms	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
CSYE Courses		
A minimum of 16 and a maximum of 24 semester hours may be taken from the following list toward the elective requirement:		16 to 24
CSYE (CSYE 6510 and CSYE 6530 excluded)		
INFO Courses		
A maximum of 8 semester hours may be taken from the following list toward the elective requirement:		0 to 8
INFO (INFO 6250 excluded)		

THESIS OPTION ¹

Code	Title	Hours
CSYE 7990	Thesis	8
CSYE Courses		
A minimum of 8 and a maximum of 16 semester hours may be taken from the following list toward the elective requirement:		8 to 16
CSYE (CSYE 6510 and CSYE 6530 excluded)		
INFO Courses		
A maximum of 8 semester hours may be taken from the following list toward the elective requirement:		0 to 8
INFO (INFO 6250 excluded)		

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

¹ Students who elect to pursue the thesis option must first propose a topic and advisor for their thesis and receive approval from the program director.

Engineering Management, MSEM

Website (http://www.mie.neu.edu/degrees/ms-em/#_ga=12490377606902590881443725887)

Thomas P. Cullinane, PhD
Professor and Program Director
334 Snell Engineering
617.373.4851
t.cullinane@northeastern.edu

Himlona Palikhe, PhD
Assistant Teaching Professor and Advisor
514 Dana Research Center

617.373.4288
h.palikhe@northeastern.edu

The Master of Science in Engineering Management offers graduate students an opportunity to develop both technical expertise and business competence that is in high demand among prospective technology-based employers. Industry leaders are seeking qualified and talented individuals who are not only able to guide research and design teams but also able to direct and supervise development and production processes. The combination of technical proficiency and business skills fostered in the engineering management program is designed to provide a competitive edge for graduates seeking a wide range of positions in technology-based product or service industries, as well as in comparable local, state, and federal agencies and programs.

The program was designed by experienced high-level managers and academic leaders as an option for engineers and scientists to broaden their skill sets to include management tools and techniques that are applicable to technology-based industries. Graduates of the engineering management program work as project managers or leaders of teams in technology-based industries. Upon completion of the program, students find that their acquired skills are applicable to a wide range of industries, primarily those focused upon the development of technical products and the management of technical projects.

Graduates may assist companies in bringing a product from an idea through its development phases to its introduction to the marketplace. They may also be involved in forming and managing teams for assessing cost-effectiveness, formulating strategies to improve production, or analyzing a company's supply chain. Most of these projects cannot be successfully completed without the skills of those possessing a background in management decision making and engineering expertise; therefore, the engineering management graduate is often a technical liaison to all levels of management. As a result, many of the assignments held by engineering management graduates have actually proven to be a gateway to upper-level management positions.

The current program of study can be taken on a part-time or full-time basis on-ground or online. There are four core courses required of all students, which have been formulated to satisfy the foundation requirements of economic decision making, decision-making mathematics, and project management. In addition to these required courses, the curriculum consists of electives that allow students to choose either a broad-based program of study or one centered on a particular concentration. Some students may elect to refresh or enhance their technical skills in engineering-based subjects such as information systems, computer systems engineering, or graduate courses from the traditional engineering disciplines. Other students may prefer to broaden their knowledge base by selecting course work in management subjects such as engineering organizational psychology, financial management, logistics and warehousing, supply chain engineering, or lean systems design. Additionally, students may also elect to complete the Gordon Engineering Leadership Program as part of their engineering management degree.

One recent graduate has observed that "Northeastern's MSEM is like an MBA for engineers, with high-quality, dedicated professors who are proficient in their field yet are able to convey information in a way that's easy to understand." This graduate also noted, "My courses in project management have been key to understanding the subtleties that affect Project Managers while technical courses provide a strong background in fundamentals as well as specialty topics. My experience with co-op has been outstanding and has truly helped me further my career."

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering Management with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering Management in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate will require 16 hours of advisor-approved engineering management technical courses.

Engineering Leadership (p. 222)

ENGINEERING BUSINESS

Master's Degree in Engineering Management with Graduate Certificate in Engineering Business

Students may complete a Master of Science in Engineering Management in addition to earning a Graduate Certificate in Engineering Business. Students must apply and be admitted to the Galante Engineering Business Program in order to pursue this option. The program requires the applicant to have earned or be in a program to earn a Bachelor of Science in Engineering from Northeastern University. The integrated 32-semester-hour degree and certificate will require 16 semester hours of the engineering management core courses and 16 semester hours from the outlined business-skill curriculum. The course work, along with participation in cocurricular professional development elements, earn the Graduate Certificate in Engineering Business.

Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Program Requirements

Core Requirements

Complete all courses and requirements listed below unless otherwise indicated. Students may not register for more than 9 semester hours in the fall, spring, and summer terms.

Code	Title	Hours
Required Courses		
OR 6205	Deterministic Operations Research	4
EMGT 5220	Engineering Project Management	4
EMGT 6225	Economic Decision Making	4
IE 6200	Engineering Probability and Statistics	4

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p. 214)		16

PROJECT OPTION

Code	Title	Hours
EMGT 7945	Master's Project	4
Complete 12 semester hours from the course list below. (p. 214)		12

THESIS OPTION

Code	Title	Hours
EMGT 7990	Thesis	8
Complete 8 semester hours from the course list below. (p. 214)		8

ONLINE OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p. 214)		16
Courses offered online can be found on the online course list below. (p.)		

Course List

Code	Title	Hours
CSYE 7250	Big Data Architecture and Governance	
CSYE 7280	User Experience Design and Testing	
EMGT 5300	Engineering/Organizational Psychology	
EMGT 6305	Financial Management for Engineers	
EMGT 7978	Independent Study	
ENSY 5000	Fundamentals of Energy System Integration	
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5020	Engineering Product Design Methodology	
GE 5030	Iterative Product Prototyping for Engineers	
GE 5100	Product Development for Engineers	
IE 5400	Healthcare Systems Modeling and Analysis	
IE 5500	Systems Engineering in Public Programs	
IE 5617	Lean Concepts and Applications	
IE 5640	Data Mining for Engineering Applications	
IE 6300	Manufacturing Methods and Processes	
IE 7200	Supply Chain Engineering	
IE 7215	Simulation Analysis	
IE 7275	Data Mining in Engineering	
IE 7280	Statistical Methods in Engineering	
IE 7285	Statistical Quality Control	
IE 7290	Reliability Analysis and Risk Assessment	
IE 7315	Human Factors Engineering	
INFO 6101	Data Science Engineering with Python	
INFO 6210	Data Management and Database Design	
INFO 6215	Business Analysis and Information Engineering	
INFO 7245	Agile Software Development	

INFO 7285	Organizational Change and IT
INFO 7290	Data Warehousing and Business Intelligence
INFO 7330	Information Systems for Healthcare-Services Delivery
INFO 7365	Enterprise Architecture Planning and Management
INFO 7385	Managerial Communications for Engineers
ME 5645	Environmental Issues in Manufacturing and Product Use
ME 6200	Mathematical Methods for Mechanical Engineers 1
OR 7230	Probabilistic Operation Research
OR 7235	Inventory Theory
OR 7240	Integer and Nonlinear Optimization
OR 7245	Network Analysis and Advanced Optimization
OR 7310	Logistics, Warehousing, and Scheduling
TELE 5330	Data Networking

Electives outside the College of Engineering

A maximum of 9 semester hours may be taken from the following list toward the elective requirement:

ENTR 6200	Enterprise Growth and Innovation
ENTR 6212	Business Planning for New Ventures
ENTR 6218	Business Model Design and Innovation
ENTR 6219	Financing Ventures from Early Stage to Exit
MGSC 6206	Management of Service and Manufacturing Operations
SCHM 6214	Sourcing and Procurement
SCHM 6215	Supply Chain Analytics
SCHM 6221	Sustainability and Supply Chain Management
SCHM 6223	Managing Healthcare Supply Chain Operations
SCHM 6224	Demand Planning and Forecasting
TECE 6222	Emerging and Disruptive Technologies
TECE 6230	Entrepreneurial Marketing and Selling
TECE 6250	Lean Design and Development
TECE 6300	Managing a Technology-Based Business
TECE 6340	The Technical Entrepreneur as Leader

Online Course List

Code	Title	Hours
EMGT 5300	Engineering/Organizational Psychology	
EMGT 6305	Financial Management for Engineers	
ENSY 5000	Fundamentals of Energy System Integration	
IE 5640	Data Mining for Engineering Applications	
IE 6300	Manufacturing Methods and Processes	
IE 7200	Supply Chain Engineering	
IE 7215	Simulation Analysis	
IE 7280	Statistical Methods in Engineering	

IE 7285	Statistical Quality Control
IE 7290	Reliability Analysis and Risk Assessment
IE 7315	Human Factors Engineering
INFO 6210	Data Management and Database Design
INFO 6215	Business Analysis and Information Engineering
ME 5645	Environmental Issues in Manufacturing and Product Use
ME 6200	Mathematical Methods for Mechanical Engineers 1
OR 7230	Probabilistic Operation Research
OR 7240	Integer and Nonlinear Optimization
OR 7310	Logistics, Warehousing, and Scheduling

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Energy Systems, MSENES

Website (<http://www.coe.neu.edu/degrees/ms-es>)

Hameed Metghalchi, Sc.D.

Professor and Program Director

Editor-in-Chief, Journal of Energy Resources Technology

319 Snell Engineering

617.373.2973

m.metghalchi@northeastern.edu

The Master of Science in Energy Systems (MSENES) integrates engineering, business, and policy into a high-level signature, multidisciplinary graduate program. Energy systems students have an opportunity to learn how to leverage business skills and public policy knowledge to accomplish their engineering goals. This program is ideal for the engineer or technical business major who is interested in pursuing an industrial or public-planning-based career.

The program's mission is to educate students in current and future energy systems technologies, to integrate energy-related technologies with the economics and financial considerations required to implement them, and to develop leadership and decision-making skills to implement energy systems in either the private or public sectors of the global market. The program will expose students to a combination of academic and corporate experience in energy systems.

The program curriculum features a multidisciplinary range of electives from five different academic colleges at Northeastern. The curriculum is flexibly designed with a set of four core courses in engineering knowledge and finance in addition to four electives. The core courses help relate these electives back to energy-related engineering concepts, including power strategies, energy renewal, sustainable energy solutions, energy storage, energy conversion, and energy efficiency. By integrating concepts across these disciplines, our students learn that implementing energy solutions requires an economic solution as well as an engineering one.

Students are exposed to business educators and practicing professionals and have the opportunity to participate in a six-month co-op experience. Practicing professionals with experience in the industry who have successfully implemented energy systems or devices and policies

are actively involved in the program as adjunct professors and invited speakers. Through this curriculum and interaction with practitioners, students should be prepared to effectively integrate energy system development over a broad spectrum of technologies with the financial requirements to successfully implement them and to compete in the global energy market.

Successful graduates of the program will be involved in the decision making or policy planning that will deliver minimally polluting, energy-efficient systems to the global market. They will have the base training necessary to lead efforts within companies to plan and implement new energy-generation investments, realize energy-efficiency improvements specifically at the system level, and participate in energy and environmental markets such as cap-and-trade systems.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Energy Systems with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Energy Systems in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved energy systems technical courses.

Engineering Leadership (p. 222)

Program Requirements

Core Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Code	Title	Hours
Required Courses		
EMGT 6225	Economic Decision Making	4
ENSY 5000	Fundamentals of Energy System Integration	4
ME 6200	Mathematical Methods for Mechanical Engineers 1	4
FINA 6309	Foundations of Accounting and Finance	4

Options

Complete one of the following options:

GENERAL OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p.)		

ONLINE/HYBRID OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p.)		16
Courses offered online can be found on the Online/Hybrid Course List. (p.)		

Course List

Code	Title	Hours
CHEM 5651	Materials Chemistry of Renewable Energy	
CHME 5630	Biochemical Engineering	
EECE 5680	Electric Drives	
EECE 5682	Power Systems Analysis 1	
EECE 5684	Power Electronics	
EECE 5686	Electrical Machines	
EECE 7398	Special Topics	
EMGT 5220	Engineering Project Management	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
ENSY 5100	Hydropower	
ENSY 5200	Energy Storage Systems	
ENSY 5300	Electrochemical Energy Storage	
ENSY 5400	Power Plant Design and Analysis	
ENSY 5585	Wind Energy Systems	
ENSY 7374	Special Topics in Energy Systems	
ENSY 7440	Energy Systems Engineering Leadership Challenge Project 1	
ENSY 7442	Energy Systems Engineering Leadership Challenge Project 2	
ENSY 7945	Master's Project	
ENSY 7978	Independent Study	
IE 6200	Engineering Probability and Statistics	
ME 5645	Environmental Issues in Manufacturing and Product Use	
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 7270	General Thermodynamics	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
OR 6205	Deterministic Operations Research	
SBSY 5200	Sustainable Engineering Systems for Buildings	

Nontechnical Electives

A maximum of 5 semester hours may be taken from the following list toward the elective requirement:

ARCH 5210	Environmental Systems and Recitation for ARCH 5210	
FINA 6203	Investment Analysis	
FINA 6205	Financial Strategy	
FINA 6215	Business Turnarounds	

Online/Hybrid Course List

Code	Title	Hours
EECE 5682	Power Systems Analysis 1	
EMGT 5220	Engineering Project Management	

IE 6200	Engineering Probability and Statistics
ME 5645	Environmental Issues in Manufacturing and Product Use
ME 5685	Solar Thermal Engineering
ME 7270	General Thermodynamics
OR 6205	Deterministic Operations Research

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Energy Systems, MSENES—Academic Link Program

Website (<http://www.coe.neu.edu/degrees/ms-es>)

Hameed Metghalchi, Sc.D.

Professor and Program Director
Editor-in-Chief, Journal of Energy Resources Technology
319 Snell Engineering
617.373.2973
m.metghalchi@northeastern.edu

Designing and implementing optimal methods to produce and utilize energy is one of the most pressing global issues today. Finding ways to implement these solutions that are sustainable and marketable is key. The energy systems Academic Link (AL) program is meant to provide students of all—STEM disciplines (such as English, Sociology, Business, etc.) with the foundation skills necessary to gain the skills needed to create and implement energy solutions. Students will begin the program by taking two core courses that cover topics across thermosciences and math along with the general energy systems curriculum.

The Academic Link core courses will provide students with an introduction to the fundamentals that are necessary to be successful in the energy system program. Once students complete the Academic Link courses they will move through our multidisciplinary energy systems curriculum that integrates engineering, business, and policy. Our curriculum is flexibly designed with a set of core courses in engineering and finance complemented by a range of electives across five different academic colleges. Our core and elective courses will help to prepare students to lead the efforts to implement energy systems solutions that have a long-term positive effect on businesses and communities.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

Program Requirements

General Requirements

A minimum of 40 semester hours must be earned toward completion of the MSES-AL degree. A minimum grade-point average of 3.000 is required over all courses applied toward the degree.

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ENSY 5050	Fundamentals of Thermal Science 1	4
ENSY 5060	Fundamentals of Thermal Science 2	4

EMGT 6225	Economic Decision Making	4
ENSY 5000	Fundamentals of Energy System Integration	4
ME 6200	Mathematical Methods for Mechanical Engineers 1	4
FINA 6309	Foundations of Accounting and Finance	4

Options

Complete one of the following options:

GENERAL OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p.)		16

ONLINE/HYBRID OPTION

Code	Title	Hours
Complete 16 semester hours from the course list below. (p.)		16
Courses offered online can be found on the online/hybrid course list. (p.)		

Course List

Code	Title	Hours
CHEM 5651	Materials Chemistry of Renewable Energy	
CHME 5630	Biochemical Engineering	
EECE 5680	Electric Drives	
EECE 5682	Power Systems Analysis 1	
EECE 5684	Power Electronics	
EECE 5686	Electrical Machines	
EECE 7398	Special Topics	
EMGT 5220	Engineering Project Management	
ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
ENSY 5100	Hydropower	
ENSY 5200	Energy Storage Systems	
ENSY 5300	Electrochemical Energy Storage	
ENSY 5400	Power Plant Design and Analysis	
ENSY 5585	Wind Energy Systems	
ENSY 7374	Special Topics in Energy Systems	
ENSY 7440	Energy Systems Engineering Leadership Challenge Project 1	
ENSY 7442	Energy Systems Engineering Leadership Challenge Project 2	
ENSY 7945	Master's Project	
ENSY 7978	Independent Study	
IE 6200	Engineering Probability and Statistics	
ME 5645	Environmental Issues in Manufacturing and Product Use	
ME 5685	Solar Thermal Engineering	
ME 5690	Gas Turbine Combustion	
ME 7270	General Thermodynamics	
ME 7300	Combustion and Air Pollution	
ME 7305	Fundamentals of Combustion	
OR 6205	Deterministic Operations Research	

SBSY 5200	Sustainable Engineering Systems for Buildings
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Nontechnical Electives

A maximum of 5 semester hours may be taken from the following list toward the elective requirement:

ARCH 5210 and ARCH 5211	Environmental Systems and Recitation for ARCH 5210
FINA 6203	Investment Analysis
FINA 6205	Financial Strategy
FINA 6215	Business Turnarounds

Online/Hybrid Course List

Code	Title	Hours
EECE 5682	Power Systems Analysis 1	
EMGT 5220	Engineering Project Management	
IE 6200	Engineering Probability and Statistics	
ME 5645	Environmental Issues in Manufacturing and Product Use	
ME 5685	Solar Thermal Engineering	
ME 7270	General Thermodynamics	
OR 6205	Deterministic Operations Research	

Program Credit/GPA Requirements

40 total semester hours required
Minimum 3.000 GPA required

Information Systems, MSIS

Website (<http://www.coe.neu.edu/degrees/ms-is>)

Kal Bugrara, PhD

Senior Program Director
Dana Hall 5th Floor
kmb@coe.neu.edu

We offer cutting-edge expertise in a variety of courses that combine technological advances and business practices. We stress creative and inventive approaches to problem solving, which necessitates empowering students so that they can take charge of their own software projects to become originally productive. Our Information Systems program is as much an art as a science. It bypasses mechanical learning and highlights the value and excitement of engineering thinking that gets things done efficiently as well as imaginatively. We balance theory and practice, on the premise that they are always intertwined and interdependent.

We seek to provide a basic foundation for our students and then seek to push them to new heights to advance their information technology skills in a way that keeps up and, better yet, exceeds the necessarily fast pace of this progressive field. It is not for us just a question of not being left behind; we strive to be at the forefront of software innovation in an effort to transform contemporary society even more radically than technology has already done—to take gigantic strides in business, medicine, education, and security.

The program offers a wide range of courses that reflect current and future industry trends:

- Cryptocurrency and Smart Contract Engineering
- Engineering of Big-Data Systems
- Business Intelligence and Data Analytics
- Cyber-Security Engineering and Development

- Digital Business
- Full-Stack Software Engineering
- User Experience Design
- Data Science and Machine Learning Systems Engineering

Program Concentrations

You can complete the MSIS program with one of the following concentrations:

- General information systems
- User experience
- Big data systems and analytics
- Smart contracts
- Intelligent systems

Seattle and Silicon Valley Campuses

Students can complete this degree at our Seattle and Silicon Valley campuses. Students will have the option to choose from a continually expanding list of electives that are offered strategically to meet industry demand in Seattle and Silicon Valley.

Graduate Certificate Options

Students enrolled in the MSIS program in the College of Engineering have the opportunity to pursue the graduate certificate in Engineering Leadership or the Graduate Certificate in Computer Systems Engineering (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/computer-systems-graduate-certificate>) in addition to or in combination with the MS degree.

GORDON INSTITUTE OF ENGINEERING LEADERSHIP**Master's Degree in Information Systems with Graduate Certificate in Engineering Leadership**

Students may complete a master's degree in Information Systems in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour-curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry based challenge project with multiple mentors. The integrated 32 semester hour degree and certificate will require 16 hours of advisor-approved Information Systems technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Students may not register for more than 9 semester hours in the fall, spring, and summer terms. All 32 credits must be completed from the IS and CSYE program course work specified. The MSIS program does not accept any transfer credit.

Core Requirements

Code	Title	Hours
INFO 5100 and INFO 5101	Application Engineering and Development and Lab for INFO 5100	4

Concentrations

Complete one of the following concentrations:

- General Information Systems (p. 219)
- User Experience (p. 219)

- Big Data Systems and Analytics (p. 219)
- Smart Contracts (p. 219)
- Intelligent Systems (p. 219)

GENERAL INFORMATION SYSTEMS

Code	Title	Hours
Complete 16 semester hours in the following subject area (INFO 7290 and INFO 6101 excluded):		16
INFO		

USER EXPERIENCE

Code	Title	Hours
CSYE 7280	User Experience Design and Testing	4
INFO 6150	Web Design and User Experience Engineering	4
INFO 6245	Planning and Managing Information Systems Development	4
INFO 6350	Smartphones-Based Web Development	4

BIG DATA SYSTEMS AND ANALYTICS

Code	Title	Hours
CSYE 6225	Network Structures and Cloud Computing	4
CSYE 7245	Big-Data Systems and Intelligence Analytics	4
INFO 7250	Engineering of Big-Data Systems	4
INFO 7390	Advances in Data Sciences and Architecture	4

SMART CONTRACTS

Code	Title	Hours
Complete four from the following:		16
INFO 7500	Cryptocurrency and Smart Contract Engineering	
INFO 7510	Smart Contract Application Engineering and Development	
INFO 7520	Engineering of Advanced Cryptocurrency Systems	
INFO 7525	Regulatory Aspects of Smart Contract Automation	
INFO 7535	Digital Smart Contracts Product Innovations	

INTELLIGENT SYSTEMS

Code	Title	Hours
CSYE 7245	Big-Data Systems and Intelligence Analytics	4
CSYE 7280	User Experience Design and Testing	4
INFO 7375		
INFO 7610	Special Topics in Natural Language Engineering Methods and Tools	4

Electives

Code	Title	Hours
Complete 12 semester hours from the following subject areas (CSYE 6220, CSYE 6510, and CSYE 6530 excluded):		12
INFO		
CSYE		

Seattle Campus Course List

Code	Title	Hours
CSYE 6225	Network Structures and Cloud Computing	
CSYE 7245	Big-Data Systems and Intelligence Analytics	
CSYE 7280	User Experience Design and Testing	
INFO 6150	Web Design and User Experience Engineering	
INFO 6205	Program Structure and Algorithms	
INFO 6210	Data Management and Database Design	
INFO 6215	Business Analysis and Information Engineering	
INFO 6250	Web Development Tools and Methods	
INFO 6350	Smartphones-Based Web Development	
INFO 7250	Engineering of Big-Data Systems	
INFO 7390	Advances in Data Sciences and Architecture	

Silicon Valley Campus Course List

Code	Title	Hours
INFO 7500	Cryptocurrency and Smart Contract Engineering	4
INFO 7510	Smart Contract Application Engineering and Development	4

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Telecommunication Networks, MS

Website (<http://www.coe.neu.edu/degrees/ms-tsm>)

Peter O'Reilly, PhD

Program Director
Dana Hall 5th Floor
617.373.5548
poreilly@coe.neu.edu (p.oreilly@northeastern.edu)

The Master of Science in Telecommunication Networks is designed for professionals currently in the telecommunications or networking field who either wish to enhance their technical skills and credentials or who wish to make a transition to the business side of telecommunications or networking. We also welcome applications from prospective students with limited industry experience. This program, which may be pursued on a full- or part-time basis, is one of only a very few master's programs in telecommunications and networking in the United States that is truly multidisciplinary, giving students the flexibility to tailor the curriculum to their specific interests, backgrounds, and career goals.

Degree Requirements

The program requires that a mix of core required courses and elective courses be taken—16 semester hours of core course work and a minimum of 16 semester hours of elective course work. Although there are some dependencies among the core courses, the program may be started in either the fall or spring semester.

There are four required core courses and a wide range of technical and business electives available. The core courses each carry 4 semester

hours of credit. A maximum of two of the core courses may be waived only if a student has taken similar course material at another university with a satisfactory grade. If a technical core course is waived, it must be replaced with a technical elective. Similarly, if the business core course is waived, it must be replaced with a business elective.

At least one of the electives must be a business elective and at least one must be a technical elective. The technical electives include courses on network and communications technology and on the development of software systems and applications. The business electives are focused on engineering management and entrepreneurship. Electives come from approved lists of courses supplied by the colleges of engineering, business, and computer and information science. All students must take at least one technical elective and one business elective. These electives must be courses of at least 3 semester hours. Students may take elective course work outside these lists only with the prior approval of the program director.

It is expected that students beginning this program will have an adequate background in the following areas: C, C++, or Java programming languages; probability and statistics; and differential and integral calculus.

Special topics courses, as well as other courses from outside the program, may be used as electives with prior approval of the program director.

Independent Study (TELE 5978), usually 1 or 2 semester hours, or Master's Project (TELE 6945) is sometimes available for students and must be carried out under the supervision of a professor and must have prior approval of the program director. Proposals for Independent Study or a Master's Project need to be submitted at least one month before the start of the semester.

Directed Study (TELE 5976), also for 1 or 2 semester hours, is sometimes available for students. For directed study projects, a student follows a prescribed curriculum, usually with some form of an exam at the end of the semester.

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Telecommunication Networks with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Telecommunications Networks in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 32-semester-hour degree and certificate require 12 hours of technical core courses from the telecommunication networks program and 4 hours from the technical course list provided for this program.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Students may not register for more than 10 semester hours in the fall and spring terms and 4 semester hours in each of the three

summer terms. Any exceptions must be approved by the program director.

Core Requirements

Code	Title	Hours
TELE 5330 and TELE 5331	Data Networking and Lab for TELE 5330	4
TELE 5340	Telecommunications Public Policy and Business Management	4
TELE 5350	Telecom and Network Infrastructure	4
TELE 5360	Internet Protocols and Architecture	4

Electives

A grade of C or higher is required in each elective. At least one course must be taken from the business course list and at least one course from the technical course list.

Code	Title	Hours
	Complete a minimum of 16 semester hours from the course lists below (p. 220)	16

BUSINESS COURSE LIST

Code	Title	Hours
EMGT 5220	Engineering Project Management	
EMGT 6225	Economic Decision Making	
EMGT 6305	Financial Management for Engineers	
ENTR 6200	Enterprise Growth and Innovation	
ENTR 6212	Business Planning for New Ventures	
ENTR 6218	Business Model Design and Innovation	
ENTR 6219	Financing Ventures from Early Stage to Exit	
HRMG 6200	Managing People and Organizations	
INFO 6245	Planning and Managing Information Systems Development	
MGMT 6214	Negotiations	
MGSC 6206	Management of Service and Manufacturing Operations	
MKTG 6200	Creating and Sustaining Customer Markets	
TECE 6222	Emerging and Disruptive Technologies	
TECE 6230	Entrepreneurial Marketing and Selling	
TECE 6250	Lean Design and Development	
TECE 6300	Managing a Technology-Based Business	

TECHNICAL COURSE LIST

Code	Title	Hours
CS 5520	Mobile Application Development	
CS 6710	Wireless Network	
CS 6740	Network Security	
CSYE 6200	Concepts of Object-Oriented Design	
CSYE 6225	Network Structures and Cloud Computing	
CSYE 6510	Fundamentals of the Internet of Things	
EECE 5155	Wireless Sensor Networks and the Internet of Things	
EECE 5576	Wireless Communication Systems	
EECE 7364	Mobile and Wireless Networking	

IA 5150 and IA 5151	Network Security Practices and Lab for IA 5150
INFO 6101	Data Science Engineering with Python
INFO 6210	Data Management and Database Design
INFO 6350	Smartphones-Based Web Development
TELE 5600	Linux/UNIX Systems Management for Network Engineers
TELE 6100	Mobile Wireless Communications and Networking
TELE 6200	Advanced Data Networking
TELE 6350	IP Telephony
TELE 6360	Operation Support Systems in Telecommunications
TELE 6400	Software-Defined Networking
TELE 6603	Special Topics—Networking

Program Credit/GPA Requirements

Minimum of 32 total semester hours required

Minimum 3.000 GPA required

Gordon Institute of Engineering Leadership

Website (<http://www.northeastern.edu/gordonleadership>)

Simon Pitts

Institute Director

415 Stearns Center
617.373.6052
617.373.7680 (fax)

Amy Manley, Director of Admissions and Marketing,
a.manley@northeastern.edu or gordonleadership@northeastern.edu

The Gordon Engineering Leadership Program (GEL) offered by the Gordon Institute of Engineering Leadership is a transformational graduate program designed to build a future corps of engineering leadership professionals. GEL seeks to accelerate leadership development capability in an engineering context through a concentrated curriculum that inculcates both the psychological skills and capabilities needed to lead engineers in parallel with technical skills to successfully engineer products to customers and markets. The program teaches relevant leadership theory followed by practice in leadership laboratories. Technical product development and scientific principles courses are followed by the completion of a market-worthy challenge project. This learning framework is supplemented with three-way mentoring from industry, faculty, and program mentors. Graduates of the program, known as Gordon Fellows, have an opportunity to gain the knowledge, skills, and attitudes required to successfully lead engineering teams. They stand out from their peers in their ability to invent, innovate, and implement engineering projects from concept to market success. Participation in GEL accelerates Gordon Fellows' careers, making them more valuable to their company.

The Challenge

When relatively unseasoned engineers run teams or projects, most fail to satisfy all of the project's critical requirements—missing the mark in functionality, performance, quality, time-to-market, cost, or other key objectives.

This shortfall exists because engineers enter the workforce without critical skills related to:

- Competitiveness
- Taking responsibility to prevent failure
- Market and customer focus
- Influencing and motivating skills
- Interdisciplinary decision making and teamwork capability
- Simultaneous optimization of all elements of performance, quality, cost, and timing
- Front-loading the engineering process
- Financial acumen
- Big-picture engineering
- Leadership abilities and organizational social awareness
- Enterprise understanding
- Program management tools and processes
- Designing to avoid failure modes
- Designing for lean manufacture

The Mission

GEL's mission is to create an elite cadre of engineering leaders who stand out from their peers in their ability to invent, innovate, and implement engineering projects from concept to market success.

These leaders will demonstrate an exceptional ability to lead engineering teams by providing purpose, direction, and motivation to influence others to achieve their collective goals.

The Method

To close the gaps and realize its mission, GEL concentrates on the knowledge, skills, and abilities that reside at the intersection of engineering and leadership.

At the end of the program, Gordon Fellows emerge with the awareness, confidence, vision, and technical dexterity to drive positive change within their organizations and society.

Admissions

GEL candidates must apply for and be admitted to both the Northeastern Graduate School of Engineering and the Gordon Engineering Leadership Program.

Students pursue GEL as part of a Master of Science degree in the engineering discipline of their choice or as a stand-alone graduate certificate. Upon completion of a Master of Science degree, students earn both the Master of Science degree in the discipline of choice and a Graduate Certificate in Engineering Leadership. Students who already hold a graduate degree in engineering or have greater than three years' engineering work experience can complete the program to earn a Graduate Certificate in Engineering Leadership. The core GEL curriculum takes place during one calendar year (September–July), and additional course work required for the Master of Science degree can be pursued before, after, or in parallel with GEL.

Programs

Graduate Certificate: Stand-Alone or Combined with Existing MS Degree

The Graduate Certificate in Engineering Leadership can be pursued as a stand-alone certificate, or the certificate can be earned in conjunction with existing Master of Science degrees offered by the College of Engineering.

Departments across the College of Engineering have developed graduation requirements that enable students to earn both the MS degree and the engineering leadership graduate certificate. Please contact your faculty mentor for details.

CORE REQUIREMENTS

Complete all courses and requirements listed below unless otherwise indicated.

Code	Title	Hours
ENLR 5121	Engineering Leadership 1	2
ENLR 5122	Engineering Leadership 2	2
ENLR 5131	Scientific Foundations of Engineering 1	2
ENLR 5132	Scientific Foundations of Engineering 2	2
ENLR 7440	Engineering Leadership Challenge Project 1	4
ENLR 7442	Engineering Leadership Challenge Project 2	4

PROGRAM CREDIT/GPA REQUIREMENTS

16 total semester hours required

Minimum 3.000 GPA required

The following MS programs can be taken in conjunction with the Engineering Leadership Graduate Certificate

- Master of Science in Bioengineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-bioengineering>)
- Master of Science in Biotechnology (<http://www.northeastern.edu/gordonleadership/degree/ms-in-biotechnology>)
- Master of Science in Chemical Engineering (<http://www.northeastern.edu/gordonleadership/degree/chemical-engineering>)
- Master of Science in Civil Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/ms-in-civil-engineering-2>)
- Master of Science in Computer Systems Engineering (<http://www.northeastern.edu/gordonleadership/degree/computer-systems-engineering>)
- Master of Science in Data Analytics Engineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-data-analytics-engineering>)
- Master of Science in Electrical and Computer Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/electrical-and-computer-engineering>)
- Master of Science in Electrical and Computer Engineering Leadership (<http://www.northeastern.edu/gordonleadership/degree/electrical-and-computer-engineering-leadership>)
- Master of Science in Energy Systems (<http://www.northeastern.edu/gordonleadership/degree/energy-systems>)
- Master of Science in Engineering and Public Policy with a Concentration in Energy and Environment (<http://www.northeastern.edu/gordonleadership/degree/ms-in-engineering-and-public-policy-with-a-concentration-in-energy-environment>)
- Master of Science in Engineering and Public Policy with a Concentration in Infrastructure Resilience (<http://www.northeastern.edu/gordonleadership/degree/ms-in-engineering-and-public-policy-with-a-concentration-in-infrastructure-resilience>)
- Master of Science in Environmental Engineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-environmental-engineering>)

- Master of Science in Engineering Management (<http://www.northeastern.edu/gordonleadership/degree/engineering-management>)
- Master of Science in Industrial Engineering (<http://www.northeastern.edu/gordonleadership/degree/industrial-engineering>)
- Master of Science in Information Systems (<http://www.northeastern.edu/gordonleadership/degree/ms-in-information-systems>)
- Master of Science in Information Assurance and Cyber Security (<http://www.northeastern.edu/gordonleadership/degree/information-assurance-and-cyber-security>)
- Master of Science in Mechanical Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/mechanical-engineering-2>)
- Master of Science in Operations Research (<http://www.northeastern.edu/gordonleadership/degree/operationsresearch>)
- Master of Science in Sustainable Building Systems (<http://www.northeastern.edu/gordonleadership/degree/ms-in-sustainable-building-systems>)
- Master of Science in Telecommunication Networks (p. 219)

For engineering leadership certificate and MS combined course requirements, please refer to the Certificate and Degree Options (<http://www.northeastern.edu/gordonleadership/prospective-students/degree-options>) found on the Gordon Institute of Engineering Leadership website.

Engineering Leadership, Graduate Certificate

The Gordon Engineering Leadership Program is a transformational, technical, and challenging graduate-level learning experience targeted for engineering professionals.

The Gordon Institute offers a **Graduate Certificate in Engineering Leadership** as formal recognition of midlevel engineers' leadership acumen and broadened cross-functional capabilities.

Pursuing the graduate certificate allows participants to:

- Take part in a hands-on curriculum taught by industry-experienced professors
- Work with peers from across engineering fields on leadership skills development
- Receive one-on-one mentoring from industry experts and faculty

The Gordon Engineering Leadership Program anchors around an intense, market-worthy challenge project based on your organization's strategic needs. This is a unique opportunity to apply your classroom experience in a professional setting, potentially further accelerating your career.

How to Earn a Graduate Certificate in Engineering Leadership

If you already have a Master of Science, then you can complete the one-year program to earn a Graduate Certificate in Engineering Leadership.

If you do not have a Master of Science, then you can still be considered for the Graduate Certificate in Engineering Leadership if you have at least three years of engineering work experience.

Additional Information can be found on the Gordon Engineering Leadership Program website. (<http://www.northeastern.edu/gordonleadership>)

Beyond a Graduate Certificate

Most candidates pursue the Gordon Engineering Leadership Program as part of a Master of Science degree in the engineering discipline of their choice. Upon completion, they earn both the Master of Science degree and a Graduate Certificate in Engineering Leadership.

Additional Information on Master of Science degrees in conjunction with a Graduate Certificate in Engineering Leadership can be found here (p. 221).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
ENLR 5121	Engineering Leadership 1	2
ENLR 5122	Engineering Leadership 2	2
ENLR 5131	Scientific Foundations of Engineering 1	2
ENLR 5132	Scientific Foundations of Engineering 2	2
ENLR 7440	Engineering Leadership Challenge Project 1	4
ENLR 7442	Engineering Leadership Challenge Project 2	4

The following MS programs can be taken in conjunction with the Engineering Leadership Graduate Certificate

- Master of Science in Bioengineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-bioengineering>)
- Master of Science in Biotechnology (<http://www.northeastern.edu/gordonleadership/degree/ms-in-biotechnology>)
- Master of Science in Chemical Engineering (<http://www.northeastern.edu/gordonleadership/degree/chemical-engineering>)
- Master of Science in Civil Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/ms-in-civil-engineering-2>)
- Master of Science in Computer Systems Engineering (<http://www.northeastern.edu/gordonleadership/degree/computer-systems-engineering>)
- Master of Science in Data Analytics Engineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-data-analytics-engineering>)
- Master of Science in Electrical and Computer Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/electrical-and-computer-engineering>)
- Master of Science in Electrical and Computer Engineering Leadership (<http://www.northeastern.edu/gordonleadership/degree/electrical-and-computer-engineering-leadership>)
- Master of Science in Energy Systems (<http://www.northeastern.edu/gordonleadership/degree/energy-systems>)
- Master of Science in Engineering and Public Policy with a Concentration in Energy and Environment (<http://www.northeastern.edu/gordonleadership/degree/ms-in-engineering-and-public-policy-with-a-concentration-in-energy-environment>)

- Master of Science in Engineering and Public Policy with a Concentration in Infrastructure Resilience (<http://www.northeastern.edu/gordonleadership/degree/ms-in-engineering-and-public-policy-with-a-concentration-in-infrastructure-resilience>)
- Master of Science in Engineering Management (<http://www.northeastern.edu/gordonleadership/degree/engineering-management>)
- Master of Science in Environmental Engineering (<http://www.northeastern.edu/gordonleadership/degree/ms-in-environmental-engineering>)
- Master of Science in Industrial Engineering (<http://www.northeastern.edu/gordonleadership/degree/industrial-engineering>)
- Master of Science in Information Systems (<http://www.northeastern.edu/gordonleadership/degree/ms-in-information-systems>)
- Master of Science in Information Assurance and Cyber Security (<http://www.northeastern.edu/gordonleadership/degree/information-assurance-and-cyber-security>)
- Master of Science in Mechanical Engineering—Select Master of Science concentration (<http://www.northeastern.edu/gordonleadership/degree/mechanical-engineering-2>)
- Master of Science in Operations Research (<http://www.northeastern.edu/gordonleadership/degree/operationsresearch>)
- Master of Science in Sustainable Building Systems (<http://www.northeastern.edu/gordonleadership/degree/ms-in-sustainable-building-systems>)
- Master of Science in Telecommunication Networks (<http://www.northeastern.edu/gordonleadership/degree/ms-in-telecommunication-networks>)

For the Graduate Certificate in Engineering Leadership and MS combined course requirements please refer to the Certificate and Degree Options (<http://www.northeastern.edu/gordonleadership/prospective-students/degree-options>) found on the Gordon Institute of Engineering Leadership website.

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Interdisciplinary PhD Programs

Thomas C. Sheahan, ScD

Senior Associate Dean for Academic Affairs
130 Snell Engineering Center
617.373.2711

The Graduate School of Engineering offers an interdisciplinary educational and research approach. PhD students conduct research and collaborate with faculty and students across disciplines to gain both depth and breadth of experience and knowledge in their area of study. Many of the student faculty advisors are jointly appointed across departments and colleges. Additionally, our PhD students have the opportunity to conduct transformative, use-inspired research in one of our multidisciplinary research centers of excellence with the goal of developing novel solutions to solve the engineering grand challenges of the 21st century.

Programs

Doctor of Philosophy (PhD)

- Information Assurance (p. 114)
- Information Assurance—Advanced Entry (p. 115)
- Interdisciplinary Engineering (p. 226)
- Network Science (p. 226)
- Population Health (p. 228)

Information Assurance, PhD

A research-based, interdisciplinary Doctor of Philosophy (PhD) in Information Assurance combines a strong security technical foundation with a security policy and social sciences perspective. It seeks to prepare graduates to advance the state-of-the-art of security in systems, networks, and the internet in industry, academia, and government. The interdisciplinary nature of the program distinguishes it from traditional doctoral degree programs in computer science, engineering, or social sciences and makes it unique in the Boston area.

Students who choose the PhD in information assurance program have a strong desire to pursue academic research solving critical cybersecurity challenges facing today's society. The PhD program is a natural path for students in the college's Master of Science in Information Assurance and Cybersecurity (<http://www.ccs.neu.edu/graduate/degree-programs/m-s-in-information-assurance>) program who want to pursue research and students with bachelor's degrees and an interest in research-focused careers. Students who pursue careers in advancing the state-of-the-art of cybersecurity have an opportunity to gain:

- A strong technical foundation in cybersecurity and an interdisciplinary perspective based on policy and social science
- A path to a research-focused career coupled with depth in information assurance research at a leading institution, one of the earliest designees by NSA/DHS as a National Center of Academic Excellence (http://www.nsa.gov/ia/academic_outreach/nat_cae/index.shtml) in Information Assurance Research, Information Assurance/Cyber Defense, and Cyber Operations
- The opportunity to work with and learn from faculty who are recognized internationally for their expertise and contributions in information assurance from Northeastern's College of Computer and Information Science, the Department of Electrical and Computer Engineering, and the College of Social Sciences and Humanities
- Access to research projects at Northeastern's research centers focused on security:
 - The Cybersecurity and Privacy Institute (<https://cyber.ccis.northeastern.edu/about>): The mission of Northeastern's Cybersecurity and Privacy Institute is to safeguard critical technology. Forging partnerships with experts in industry, government, and academia worldwide, the Institute's faculty and students develop, protect, and enhance technologies on which the world relies—from mobile devices and “smart” IoT applications to tomorrow's self-driving cars and delivery drones. Their expertise spans algorithm auditing, cloud security, cryptography, differential privacy, embedded device security, Internet-scale security measurements, machine learning, big data, and security, malware and advanced threats, network protocols and security, Web and mobile security, wireless network security.
 - The International Secure Systems Lab (<http://www.iseclab.org>), affiliated with Northeastern, a collaborative effort of European

and U.S. researchers focused on web security, malware and vulnerability analysis, intrusion detection, and other computer security issues

- The ALERT Center (<http://www.northeastern.edu/alert>), where Northeastern is the lead institution, a multiuniversity Department of Homeland Security Center of Excellence involved in research, education, and technology related to threats from explosives

The benefits of the Boston area:

- World-renowned for academic and research excellence, the Boston area is also home to some of the nation's largest Department of Defense contractors and government and independent labs such as MIT Lincoln Lab, MITRE, and Draper Lab

Degree Requirements

The PhD in information assurance degree requires completion of at least 48 semester credit hours beyond a bachelor's degree. Students who enter with an undergraduate degree will typically need four to five years to complete the program, and they will be awarded a master's degree en route to the PhD.

Doctoral Degree Candidacy

A student is considered a PhD degree candidate after completing the core courses with at least a 3.400 grade-point average (GPA) and either publishing a paper in a strong conference or journal or passing an oral exam that is conducted by a committee of three information assurance faculty members and based on paper(s) written by the student.

RESIDENCY

One year of continuous full-time study is required after admission to the PhD candidacy. During this period, the student will be expected to make substantial progress in preparing for the comprehensive examination.

DISSERTATION ADVISING

The doctoral dissertation advising team for each student consists of two information assurance faculty members, one in a technical area. When appropriate, the second faculty advisor will be from the policy/social science area.

DISSERTATION COMMITTEE

A PhD student's dissertation committee consists of the two members of the dissertation advising team plus two others: One is a member of the information assurance faculty, and the other is an external examiner who is knowledgeable about the student's research topic.

COMPREHENSIVE EXAMINATION

A PhD student must submit a written dissertation proposal and present it to the dissertation committee. The proposal should identify the research problem, the research plan, and the potential impact of the research on the field. The presentation of the proposal will be made in an open forum, and the student must successfully defend it before the dissertation committee after the public presentation.

DISSERTATION DEFENSE

A PhD student must complete and defend a dissertation that involves original research in information assurance.

AWARDING OF MASTER'S DEGREES

Students who enter the PhD in information assurance program with a bachelor's degree have the option of obtaining a master's degree from one of the departments participating in the program. To do so, they must meet all of the department's degree requirements.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying exam and area exam
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

A cumulative 3.400 GPA is required for the core requirement.

Code	Title	Hours
Fundamentals		
CS 5700 or EECE 7336	Fundamentals of Computer Networking Digital Communications	4
Software		
CS 5770	Software Vulnerabilities and Security	4
Security and Cyberlaw		
CS 6740 or CS 6750	Network Security Cryptography and Communications Security	4
IA 5200	Security Risk Management and Assessment	4
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights	4

Electives and Specializations

Code	Title	Hours
Complete 28 semester hours from the following:		28
Consult faculty advisor for other acceptable courses.		
<i>Track 1: Network/Communication Security</i>		
CS 6710	Wireless Network	
EECE 5666	Digital Signal Processing	
<i>Track 2: System Security</i>		
CS 5600 or EECE 7352	Computer Systems Computer Architecture	
IA 6120	Software Security Practices	
<i>Track 3 Policy/Society</i>		
CRIM 7246	Security Management	
POLS 7341	Security and Resilience Policy	
<i>General Electives</i>		
CS 5500	Managing Software Development	
CS 6140	Machine Learning	
CS 6200	Information Retrieval	
EECE 7204	Applied Probability and Stochastic Processes	
EECE 7205	Fundamentals of Computer Engineering	
EECE 7337	Information Theory	
SOCL 7211 or CS 6350	Research Methods Empirical Research Methods	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
IA 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
IA 9996	Dissertation Continuation	

Program Credit/GPA Requirements

48 total semester hours required
Minimum 3.000 GPA required

Information Assurance, PhD—Advanced Entry

A research-based, interdisciplinary Doctor of Philosophy (PhD) in Information Assurance combines a strong security technical foundation with a security policy and social sciences perspective. It seeks to prepare graduates to advance the state-of-the-art of security in systems networks and the internet in industry, academia, and government. The interdisciplinary nature of the program distinguishes it from traditional doctoral degree programs in computer science, engineering, or social sciences and makes it unique in the Boston area.

Students who choose the PhD in information assurance program have a strong desire to pursue academic research solving critical cybersecurity challenges facing today's society. The PhD program is a natural path for students in the college's Master of Science in Information Assurance and Cybersecurity program who want to pursue research and students with bachelor's degrees and an interest in research-focused careers. Students who pursue careers in advancing the state-of-the-art of cybersecurity have an opportunity to gain:

- A strong technical foundation in cybersecurity and an interdisciplinary perspective based on policy and social science
- A path to a research-focused career coupled with depth in information assurance research at a leading institution, one of the earliest designees by NSA/DHS as a National Center of Academic Excellence in Information Assurance Research, Information Assurance/Cyber Defense, and Cyber Operations
- The opportunity to work with and learn from faculty who are recognized internationally for their expertise and contributions in information assurance from Northeastern's College of Computer and Information Science, the Department of Electrical and Computer Engineering, and the College of Social Sciences and Humanities
- Access to research projects at Northeastern's research centers focused on security.
 - The Institute of Information Assurance (IIA), an interdisciplinary research center overseen by both the College of Computer and Information Science and the department of Electrical and Computer Engineering in the College of Engineering, and the recipient of a National Science Foundation grant to train the country's next generation of cybercorps
 - The International Secure Systems Lab, affiliated with Northeastern, a collaborative effort of European and U.S. researchers focused on web security, malware and vulnerability analysis, intrusion detection, and other computer security issues
 - The ALERT Center, where Northeastern is the lead institution, a multiuniversity Department of Homeland Security Center of

Excellence involved in research, education, and technology related to threats from explosives

The benefits of the Boston area:

- World renowned for academic and research excellence, the Boston area is also home to some of the nation's largest Department of Defense contractors and government and independent labs such as MIT Lincoln Lab, MITRE, and Draper Lab

Degree Requirements

The PhD in information assurance master entry degree requires completion of at least 16 semester credit hours beyond a bachelor's degree. Students also must complete the required core courses.

Doctoral Degree Candidacy

Refer to the information assurance, PhD, overview for admission to candidacy requirements.

RESIDENCY

Refer to the information assurance, PhD, overview for residency requirements.

DISSERTATION ADVISING

Refer to the information assurance, PhD, overview for dissertation advising requirements.

DISSERTATION COMMITTEE

Refer to the information assurance, PhD, overview for dissertation committee requirements.

COMPREHENSIVE EXAMINATION

Refer to the information assurance, PhD, overview for comprehensive examination requirements.

DISSERTATION DEFENSE

Refer to the information assurance, PhD, overview for dissertation defense and completion requirements.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying exam and area exam
Annual review
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirement

Complete 16 semester hours of approved course work. A cumulative 3.400 GPA is required for the core requirement. Consult your faculty advisor for acceptable courses.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
IA 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
IA 9996	Dissertation Continuation	

Program Credit/GPA Requirements

16 total semester hours required

Minimum 3.000 GPA required

Interdisciplinary Engineering, PhD

Thomas C. Sheahan, ScD

Senior Associate Dean for Academic Affairs
130 Snell Engineering Center
617.373.2711

The Graduate School of Engineering offers an interdisciplinary Doctor of Philosophy degree involving substantial work in two or more academic departments or disciplines. Those interested in this program of study must submit a detailed proposal of the areas of inquiry and research with their application for admission. Interdisciplinary study requires favorable recommendation by a sponsoring doctoral-degree-granting department and approval by authorized representatives of the graduate committees of the departments appropriate to the disciplines covered under the applicant's proposal. The sponsoring department serves as the student's registration department.

Formation of Interdisciplinary Committee

Students admitted for interdisciplinary study must obtain the consent of a faculty advisor who will direct his or her doctoral dissertation. This advisor, who may or may not be a member of the registration department, will chair the student's interdisciplinary committee. The chair of the registration department, or his or her designee, will then appoint a second member to the committee. These two members will invite one or more additional members or request that the director of the Graduate School of Engineering do so. The committee must represent at least two academic departments or programs, and a majority of the committee members must represent doctoral-degree-granting departments. The chair of the registration department, or his or her designee, will notify the director of the Graduate School of Engineering of the membership of the committee as soon as arrangements are finalized.

Duties of Interdisciplinary Committee

A member of the interdisciplinary committee who is also a member of the registration department will serve as the registration officer to approve course registration for the student. The registration officer will file a copy of the approved course registration with the other committee members and with the graduate committee of the registration department. The interdisciplinary committee is responsible for overseeing the completion of all requirements. The committee must also certify to the registration department and to the Graduate School of Engineering the completion of all requirements for the award of the doctoral degree.

The interdisciplinary committee must assure that the student's program represents standards comparable to those of the registration department and that the program is not so broad that it has inadequate depth in any area. The director of the Graduate School of Engineering may review a student's interdisciplinary program at any time to verify that the student meets program objectives.

Network Science, PhD

Website (<http://www.networkscienceinstitute.org>)

David Lazer, PhD

Distinguished Professor
College of Social Sciences and Humanities and College of Computer and Information Science

Network Science Program

177 Huntington Avenue, 10th Floor
617.373.8856
617.373.5884 (fax)
networkscience@northeastern.edu

The PhD program in network science aims to enhance our understanding of networks arising from the interplay of human behavior, sociotechnical infrastructures, information diffusion, and biological agents. This is an intrinsically multidisciplinary activity, with members of the network science community representing a wide range of fields including computer science, information science, complexity, physics, sociology, communication, organizational behavior, political science, and epidemiology. This is an interdisciplinary doctoral program focused on training students in network science across several colleges—including the College of Science, the College of Computer and Information Science, the College of Social Sciences and Humanities, Bouvé College of Health Sciences, the College of Engineering, and the College of Arts, Media and Design—with several research areas, including computational sciences, information sciences, health and life sciences, social sciences, and theoretical physics. See other collaborating colleges' catalog sections for possible concentration courses.

Course work is dependent on a student's area of research and subject to prior approval by their faculty advisor. Required course work includes the following: three foundational courses in network science—Complex Networks and Applications (PHYS 5116); Network Science Data (PHYS 7331); and Social Networks (POLS 7334)—at least one supplemental course in network science—Network Science Data 2 (PHYS 7332); Social Networks (POLS 7334); or Data Mining Techniques (CS 6220)—12 semester hours of elective course work defined by their area of research; and two research courses with core faculty of the program. A minimum of 32 credit hours of course work is required, though the graduate program committee may recommend additional course work based on student research interests.

Satisfactory progress in the program will be ongoing and formally evaluated at the end of both the first and second years of the program. Students are expected to maintain a cumulative GPA of 3.000 or better in all course work. Students are not allowed to retake courses. A student who does not maintain the 3.000 GPA, or is not making satisfactory progress on their dissertation research, may be recommended for termination by the graduate program committee.

Each student will have one primary research advisor from the network science doctoral program faculty.

Students will be expected to select their research advisor by the end of the spring semester of their second year in the program.

The dissertation committee consists of at least four members: the dissertation advisor, one additional network science doctoral program faculty member, one member expert in the specific topic of research (can be from outside the university), and one additional tenured/tenure-track faculty member from the concentration department/conferring college. The dissertation advisor must be a full-time tenured or tenure-track member of the Northeastern University faculty. Students may repeat the comprehensive examination once if they are unsuccessful.

Degree Candidacy

A student is considered a PhD candidate upon completion of all required course work with a minimum cumulative GPA of 3.000, satisfactory completion of the qualification exam, and satisfactory completion of the comprehensive exam.

Qualifying Examination

The qualification exam will be an oral examination of the material during the students' course work. The exam will be an hour in length and consist of questions selected by network science faculty who comprise the qualifying examination and dissertation committee. Students will receive 50 to 80 potential questions, which they must be prepared to answer, one month before the exam. The exam will consist of a subset of these questions. The qualifying exam will be offered twice annually, in the fall and spring term. All students are required to initially sit for the exam in the fall, typically in their third year of the PhD program. Students who do not pass the qualifying exam on their first attempt are expected to retake the exam in the spring term. Students may sit for the qualifying exam no more than twice.

Students who fail to complete the qualifying examination but who have completed all the PhD program's required course work with a cumulative GPA of 3.000 or better will be awarded a terminal Master of Science in Network Science degree. Note that no students will be admitted directly into the network science program for receipt of a master's degree.

Comprehensive Examination

Students must submit a written dissertation proposal to the qualifying examination and dissertation committee. The proposal should identify relevant literature, the research problem, the research plan, and the potential impact on the field. A presentation of the proposal will be made in an open forum, and the student must successfully defend it before the qualifying examination and dissertation committee. The comprehensive exam must precede the final dissertation defense by at least one year.

Dissertation Defense

A PhD student must complete and defend a dissertation that involves original research in network science. The dissertation defense must adhere to the College of Science policies.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review
Qualifying exam
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Networks		
PHYS 5116	Complex Networks and Applications	4
PHYS 7331	Network Science Data	4
PHYS 7335	Dynamical Processes in Complex Networks	4
Choose one of the following:		4
PHYS 7332	Network Science Data 2	
CS 6220	Data Mining Techniques	
POLS 7334	Social Networks	
Research		
Complete the following (repeatable) course twice:		
NETS 8984	Research	1-4

Specializations

Choose one of the following specializations or 12 semester hours of elective course work from the electives course list:

- Computer Science (p.)
- Political Science (p.)
- Epidemiology (p. 228)
- Physics (p. 228)
- Math (p. 228)
- Electives (p. 228)

COMPUTER SCIENCE

Code	Title	Hours
Choose three from the following:		12
CS 6140	Machine Learning	
CS 6220	Data Mining Techniques	
CS 6240	Large-Scale Parallel Data Processing	
CS 7800	Advanced Algorithms	

POLITICAL SCIENCE

Code	Title	Hours
POLS 7200	Perspectives on Social Science Inquiry	4
POLS 7201	Research Design	4
POLS 7202	Quantitative Techniques	4

EPIDEMIOLOGY

Code	Title	Hours
PHTH 5202	Introduction to Epidemiology	3
PHTH 5224	Social Epidemiology	3
Electives: Choose two from the elective course list below.		6-8

PHYSICS

Code	Title	Hours
Choose three from the following:		12
PHYS 5318	Principles of Experimental Physics	
PHYS 7305	Statistical Physics	
PHYS 7731	Biological Physics 1	
PHYS 7321	Computational Physics	

MATH

Code	Title	Hours
Choose three from the following:		12
MATH 7241	Probability 1	
MATH 7233	Graph Theory	
MATH 7375	Topics in Topology	
MATH 7733	Readings in Graph Theory	

ELECTIVES

Complete a minimum of 12 semester hours of elective course work related to your area of research. Common electives include the following:

Code	Title	Hours
NETS 7341	Network Economics	4
NETS 7345	The Practice of Interdisciplinary Scholarship	4
NETS 7350	Bayesian and Network Statistics	4
NETS 7983	Topics	4
NETS 8941	Network Science Literature Review Seminar	2

MATH 7233	Graph Theory	4
CS 5800	Algorithms	4
CS 6140	Machine Learning	4
CS 7180	Special Topics in Artificial Intelligence	4
CS 7295	Special Topics in Data Visualization	4
PHYS 7337	Statistical Physics of Complex Networks	4
PPUA 5301	Introduction to Computational Statistics	4

Dissertation

Code	Title	Hours
Complete one of the following (repeatable) course twice:		
NETS 9990	Dissertation	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Population Health, PhD

Beth E. Molnar, ScD, SM

Director of the Population Health Program

This program seeks to train students to become public health researchers and leaders through simultaneous examination of multiple determinations of health, including social, environmental, nutritional, and behavioral risk factors. Our students investigate the underlying causes of adverse health, including disease, disparities, and disability, through training in core population health disciplines—biostatistics, epidemiology, and health services—together with individual-specific and specialized training in topics related to student research. Importantly, our students are mentored by Northeastern's distinguished faculty, who individually and together conduct innovative, solution-focused research in critical population health topics.

Our population health doctoral students have an opportunity to learn to conduct research that addresses five key health determinants:

1. Social and community contexts
2. Environment and neighborhoods
3. Health and healthcare delivery
4. Education
5. Economic stability

Our diverse faculty has expertise in numerous population health disciplines, including health services research, health disparities, environmental and social epidemiology, biostatistics, exercise science, medical sociology, public policy, personal health technologies, and mental health. Students have the opportunity to work side by side with faculty in conducting cutting-edge, transdisciplinary research in these fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review

Dissertation committee
 Dissertation proposal
 Dissertation defense

Core Requirements

Code	Title	Hours
Health Services		
PHTH 5232 or PHTH 5234	Evaluating Healthcare Quality Economic Perspectives on Health Policy	3
Population Health		
PHTH 6400	Principles of Population Health 1	3
PHTH 6410	Principles of Population Health 2	3
Epidemiology		
PHTH 5202	Introduction to Epidemiology	3
PHTH 6202	Intermediate Epidemiology	3
Research Ethics		
BIOL 6381 or PHSC 6212	Ethics in Biological Research Research Skills and Ethics	2
Research and Analysis		
PHTH 5210	Biostatistics in Public Health	3
PHTH 6210	Applied Regression Analysis	3

Options

Complete one of the following options:

SOCIAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH OPTION

Code	Title	Hours
PHTH 5224	Social Epidemiology	3
PHTH 6440	Advanced Methods in Biostatistics	3
PHTH 6800	Causal Inference in Public Health Research	3
Electives		2-4

HEALTH SERVICES AND POLICY OPTION

Code	Title	Hours
ECON 5110	Microeconomic Theory	4
PHTH 5234	Economic Perspectives on Health Policy	3
Electives		2-4

Electives

Code	Title	Hours
CS 6220	Data Mining Techniques	
CS 7280	Special Topics in Database Management	
ECON 5110	Microeconomic Theory	
ECON 5140	Applied Econometrics	
ECON 7200	Topics in Applied Economics	
EXSC 5200	Cardiopulmonary Physiology	
EXSC 5220	Advanced Exercise Physiology	
EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HRMG 6220	Health Organization Management	
PHSC 6216	Human Physiology and Pathophysiology	

PHTH 5212	Public Health Administration and Policy
PHTH 5214	Environmental Health
PHTH 5226	Strategic Management and Leadership in Healthcare
PHTH 5228	Advances in Measuring Behavior
PHTH 5230	Global Health
PHTH 5440	Community-Based Participatory Research: Environmental Health
PHTH 5540	Health Education and Program Planning
PHTH 6200	Principles and History of Urban Health
PHTH 6204	Society, Behavior, and Health
PHTH 6208	Urban Community Health Assessment
PHTH 6320	Qualitative Methods in Health and Illness
PPUA 7247	Seminar in U.S. Health Policy and Management
SOCL 7257	Contemporary Issues in Sociology
SOCL 7287	Social Movements in Health
STRT 6220	Strategic Management for Healthcare Organizations

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
PHTH 9990	Dissertation	

Program Credit/GPA Requirements

33 total semester hours required
 Minimum 3.000 GPA required

Graduate Certificate Programs

Graduate School of Engineering Certificate Policies and Procedures

This document describes the policies and procedures that apply for graduate certificates offered by the Graduate School of Engineering (GSE).

ADMISSION INTO A GSE GRADUATE CERTIFICATE

Certificate admission requirements for **non-degree-seeking students** include a minimum 3.000 grade-point average (GPA) and completion of a relevant engineering undergraduate degree. Students without an engineering undergraduate degree should apply to the Graduate Certificate in Technology Systems Management.

In order to be considered admissible to an engineering graduate certificate, **current GSE students** must be in good academic standing. Students on academic probation will not be admitted into a graduate certificate program.

Current engineering PhD students will need to get signoff from their PhD advisor in order to be admitted into a certificate program.

Domestic Student

- May take courses at Boston campus or online

International Student

- May take courses at Boston campus
- May take courses online if student does not live in the United States

- SEVIS rules are followed to determine if an F-1 student is eligible to take an online course
- Visa compliance may restrict eligibility for taking online courses
- For GSE degree-seeking students
 - Students must complete the certificate course work before or in the same semester that they complete their degree course work.
 - I-20 may not be extended due to enrollment in a graduate certificate.
 - Students must be enrolled full-time in course work counting toward their degree program each fall and spring term. Certificate course work not counting toward the degree may be taken above and beyond that requirement in fall and spring, if the program allows, and in the summer terms.

CERTIFICATE COURSE WORK MAY BE APPLIED TOWARD A GSE DEGREE

Certificate course work completed by graduate students may be used in some cases toward a Northeastern GSE graduate degree. There are two factors to consider, course eligibility and number of courses allowed to be counted for a certificate program and a degree program, known as “double counting.” The number of eligible courses allowed for double counting are specified in the section below.

Course Eligibility

GSE certificate courses may be counted toward an engineering graduate degree if the **degree program** requirements allow for the course. Refer to the specific graduate degree requirements in the university catalog.

Course Double Counting

For most **disciplinary degrees**, students can double count up to two eligible courses for a graduate degree and graduate certificate. For MSIE, MOR, MSME general concentration, and MSChE, students can double count up to four eligible courses (with academic advisor approval for courses).

For all **multidisciplinary degrees**—ES, EM, CSYE, IS, and TNET programs—students can double count up to four eligible courses for a graduate degree and graduate certificate.

Double Counting Across Certificates

Engineering graduate courses may not be double counted across graduate certificates.

BS/MS Students

Engineering graduate courses may not be triple counted for graduate certificate and/or degree programs. Graduate courses that are double counted toward the BS and MS degrees may not be counted toward a graduate certificate.

Graduate Courses Applied to an Undergraduate Degree

Graduate courses that were applied toward an undergraduate degree cannot be double counted for a graduate certificate. Graduate courses completed as an undergraduate that are taken above and beyond the requirements for the undergraduate degree *may* count toward a graduate certificate.

ACADEMIC STANDING

All certificate-seeking students must meet the GSE requirements of a 3.000 GPA to remain in good standing. Only students who complete the required course work and remain in good standing will be eligible to be awarded a certificate.

CO-OP

Non-degree-seeking students are not eligible to participate in co-op.

Co-op eligibility will reside with the graduate degree program of the degree-seeking student. There are no additional considerations allotted by the certificate program.

APPLYING TO GRADUATE

Students must apply to graduate for their certificate programs. At the beginning of the term that students are planning on graduating from their certificate program or certificate and degree program, students must apply to graduate for the certificate. If a student is graduating with both a certificate and degree program, they must apply to graduate to both the degree and the certificate program separately. The certificate and degree are awarded concurrently, even if the certificate course work is completed prior to the degree course work.

CERTIFICATE TRANSCRIPT

Awarding of a certificate will be noted on the official Northeastern University transcript of students who complete a certificate program.

Programs

The College of Engineering offers numerous graduate certificates that may be completed alone or in combination with an MS degree. Please see the Overview tab for Certificate Policies and Procedures (p. 229) for detailed information regarding College of Engineering graduate certificates.

Chemical Engineering

- Process Safety Engineering (p. 142)

Computer Systems Engineering

- Computer Systems Engineering (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/computer-systems-graduate-certificate>)

Energy Systems

- Energy Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/energy-systems-graduate-certificate>)
- Energy Systems Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/energy-systems-management-graduate-certificate>)
- Renewable Energy (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/renewable-energy-graduate-certificate>)
- Sustainable Energy Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/sustainable-energy-systems-graduate-certificate>)

Engineering Business

- Engineering Business (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-business-graduate-certificate>)

Engineering Management

- Engineering Economic Decision Making (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-economic-decision-making-graduate-certificate>)
- Engineering Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/engineering-management-graduate-certificate>)
- Lean Six Sigma (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/lean-six-sigma-graduate-certificate>)
- Supply Chain Engineering Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/supply-chain-engineering-management-graduate-certificate>)

- Technology Systems Management (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/technology-systems-management-graduate-certificate>)

Gordon Institute of Engineering Leadership

- Engineering Leadership (p. 222)

Industrial Engineering

- Data Mining Engineering (p. 210)
- Data Analytics Engineering (p. 209)

Telecommunication Networks

- IP Telephony Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/ip-telephony-systems-graduate-certificate>)
- Broadband Wireless Systems (<http://catalog.northeastern.edu/graduate/engineering/multidisciplinary/broadband-wireless-systems-graduate-certificate>)

Bouvé College of Health Sciences

Website (<http://www.northeastern.edu/bouve/graduate>)

Susan L. Parish, PhD, MSW, Dean

Dean's Office

215 Behrakis Health Sciences Center

617.373.3323

617.373.3030 (fax)

Bouve_College_of_Health_Sciences@northeastern.edu

Barbara Guthrie, PhD, RN, FAAN

Associate Dean of Graduate Education

617.373.6913

Graduate Admissions and Student Services Office

123 Behrakis Health Sciences Center

617.373.2708

617.373.4701 (fax)

bouvegrad@northeastern.edu

The Bouvé College of Health Sciences (BCHS) strongly supports the mission of Northeastern University as a practice-oriented, student-centered, urban research institution. The college is committed to the goals of the institution, which include excellence in education, research, scholarship, clinical practice, experiential learning, access to educational opportunities, and a strong professional orientation. Each of the programs within the college supports these aims both individually and collectively.

Students in BCHS have the opportunity to interact with faculty, as well as with Boston's world-class healthcare and educational institutions. Study in our comprehensive health sciences college allows you to contribute to research advances and benefit from interdisciplinary approaches to complex issues reflecting professional practice.

BCHS graduate programs in the Schools of Pharmacy, Nursing, and Health Professions include:

School of Pharmacy

Biomedical Nanotechnology, Biomedical Sciences, Doctor of Pharmacy Direct Entry, Medicinal Chemistry, Pharmaceutical Sciences, and Pharmacology

School of Nursing

Adult-Gerontology Acute Care NP, Adult-Gerontology Primary Care NP, Doctor of Nursing Practice, Doctor of Philosophy in Nursing, Family Nurse Practitioner, Neonatal Nurse Practitioner, Nurse Anesthesia, Nursing Administration, Nursing Direct Entry, Pediatric Acute and Primary Care NP, and Psychiatric Mental Health NP

School of Health Professions

Applied Behavior Analysis, Certificate in Disability Studies, College Student Development and Counseling, Doctor of Physical Therapy, Early Intervention, Exercise Science, Health Informatics, Master of Public Health in Urban Health, Occupational Ergonomics and Health, Orthopedic Physical Therapy (CAS), Personal Health Informatics, Physician Assistant, Population Health, School Psychology, Speech Language Pathology, Sports Physical Therapy Clinical Residency Program, and Transitional Doctor of Physical Therapy

At Northeastern, you have an opportunity to acquire the knowledge and capability needed for a lifetime of social contribution and professional achievement.

Academic Policies and Procedures

- Health Certification (p. 232)
- Requirements for Clinical, Internships, and Practicum Courses (p. 232)
- Background Checks (p. 233)
- Liability Insurance (p. 234)
- Advising (p. 234)
- Transfer of Credit (p. 234)
- Course Substitution (p. 234)
- Academic Progression (p. 234)
- Student's Academic Standing (p. 235)
- Academic Probation Policy (p. 236)
- Financial Awards (p. 236)
- Graduation Policies (p. 237)
- Academic Dismissal (p. 237)

Health Certification

All new students must complete the University Health Report form following acceptance to the university. This form may be obtained at the University Health and Counseling Services (UHCS) located at 135 Forsyth Building or downloaded from the UHCS website (<http://catalog.northeastern.edu/graduate/health-sciences/academic-policies-procedures/health-certification/%20http://www.northeastern.edu/uhcs/forms>).

As a condition of matriculation at Northeastern University, all students are required to submit the completed University Health Report form to UHCS. Graduate students must return the form **no later than one month** prior to entering the university. UHCS will block the registration of those who do not file the correct forms. All documentation must be signed by a medical doctor, nurse practitioner, or physician assistant. Medical documentation and health certification are maintained by UHCS. Please refer to the University Health Report form for further information.

Programs in the Bouvé College of Health Sciences may require additional medical documentation and health certification. This varies among programs; consult your program handbook or your program advisor for more information. Additional requirements may include exam or statement of good health prior to registration, annual proof of physical examination, and/or proof of additional immunities. Additional clinical clearance(s) may be required by some programs prior to being present in any clinical setting. Students should consult their program director or clinical coordinator for more information.

Requirements for Clinical, Internships, and Practicum Courses

- Courses offered at affiliated hospitals, clinics, schools, medical facilities, or other institutions involve contractual agreements with

these agencies. Students assigned to an institution for instruction are expected to adhere to the rules and regulations of that institution. Failure to adhere to these rules may result in dismissal from that institution.

- Evidence of health clearance is required for experiential courses (including clinicals, internships, and practicum) in their field of study. All students, regardless of age, must have a current physical exam, tuberculin test, and documentation of immunity on file at University Health and Counseling Services (UHCS) and provide such documentation to their on-campus clinical coordinator/clinical placement office.
- School of Nursing students must provide evidence of health documentation utilizing an immunization tracker in order to ensure that documents are updated on a yearly basis. International nursing students must have a current U.S. nursing license.
- Students must meet the health clearance requirements of their academic program and any site-specific requirements prior to entering the clinical setting. This means that students must make arrangements for their physical exams and immunizations months before they are scheduled for a clinical course or rotation. Students who do not present the appropriate health certification will be blocked from registering for, or attending, a clinical course or rotation until satisfactory evidence is provided.
- More specific guidelines are available from University Health and Counseling Services in 135 Forsyth, online at UHCS (<https://www.northeastern.edu/uahcs/forms/clinical-clearance>), or from the individual program's clinical placement office. Guidelines are updated periodically and students must meet the most current guidelines or they will not be allowed into a clinical area.
- Students completing experiential courses may also be required to submit to and successfully clear criminal history/background checks.
- All students are required by federal and state law to respect the confidentiality of the patients' records to which they may be privy. This includes, but is not limited to, patient identity and identifiers, diagnostic tests performed, medical history, and medications prescribed. For more information, students should contact their program advisor.
- Students should be aware that, while participating in any form of clinical practice, they continue to be under the jurisdiction of the university. Any breaches of conduct committed by a student in a clinical setting that would be a violation of the Code of Student Conduct shall also be considered a cause for disciplinary action against the student.
- Evaluation for clinical courses will be based on established guidelines and policies that students will receive prior to the clinical component. Periodic performance evaluations will take place during the course of the academic term. See specific program clinical policies and procedures handbooks or course syllabi.
- The university is affiliated with numerous clinical sites across the country. Depending on the program, students may be required to travel outside of Massachusetts to complete clinical courses. Students are responsible for any costs associated with transportation and/or housing.

Academic, Professional, or Research Misconduct

Bouvé students are expected to adhere to the highest academic and professional standards. The university's *Code of Student Conduct* sets

forth the university's expectations of behavior that promote the safety and welfare of the Northeastern University community. The *Code of Student Conduct* and policies for implementation can be found on the Office of Student Conduct and Conflict Resolution's (<http://www.northeastern.edu/osccr/code-of-student-conduct>) website.

Failure to meet these standards, including misconduct in academic, professional, or research activities, will result in disciplinary action. Such actions may include a lowered or failing grade in the course, probation, suspension, or immediate dismissal from the program. **Students found responsible for academic, professional, or research misconduct will have a letter placed in their permanent file stating the pertinent findings of their case.** No student may withdraw from a course in which they have been notified that they will fail for a specific finding of academic dishonesty.

The university's *Code of Student Conduct* defines various aspects of academic misconduct, such as cheating and plagiarism. **Lack of knowledge of these definitions does not negate the student's responsibility for upholding them.** Academic misconduct is regarded as a serious violation of ethical standards and may result in the student's immediate dismissal from the graduate program.

In addition to maintaining complete honesty in all academic work, students admitted to clinical or professional programs in the Bouvé College of Health Sciences are expected to familiarize themselves with the code of ethical conduct of the professional discipline they are entering and to agree to uphold these principles.

Similarly, students admitted to graduate research programs are expected to familiarize themselves with the code of ethics in research. Such a code is outlined in *Guidelines for the Conduct of* (<https://oir.nih.gov/sourcebook/ethical-conduct/research-ethics/nih-guidelines>) *Research*. Ethical codes of conduct for researchers are also presented in the National Academy of Sciences' (<http://www.nap.edu/readingroom/books/obas>) *On Being a Scientist, Responsible Conduct in Research* (<https://www.nap.edu/catalog/12192/on-being-a-scientist-a-guide-to-responsible-conduct-in>). Violations of research ethics can include, but are not limited to, falsification or fabrication of data, plagiarism, malicious allegations of misconduct in science, covering up or failing to report misconduct, obstructing due process in investigations of misconduct, and reprisals against those revealing misconduct.

Background Checks

An increasing number of clinical sites require background checks for employees, as well as for students who come to their facilities. Northeastern University students need to have background checks done if their assigned clinical agency requires it. Some sites may also require drug testing. The college contracts with a national company, CastleBranch, (<https://www.castlebranch.com>) to perform these checks/screenings. CastleBranch (<https://www.castlebranch.com>) charges fees to conduct background checks/screenings, which will vary depending on the type of background check needed. All fees will be paid by the student directly to CastleBranch (<https://www.castlebranch.com>).

All background check information is confidential. Results are posted to the CastleBranch (<https://www.castlebranch.com>) website in a secure, tamperproof environment. You will be able to view your own results online using a password. You will be contacted by your on-campus clinical coordinator only if there is a question about your results. Neither you nor CastleBranch (<https://www.castlebranch.com>) is required to reveal the actual results of your background check to the clinical site or anyone

else at the university. However, you may not be able to be placed at that clinical site based on the site's requirements.

If your assigned clinical site requires students to have a background check, your on-campus clinical coordinator/clinical placement office will inform you of the requirements and provide you with instructions and a deadline for completing the check. To assure adequate processing time prior to the start of your clinical experience, it is crucial that you complete the check by the deadline you are given. Failure to complete the check in a timely manner could jeopardize your progression in your academic program.

Liability Insurance

All students on clinicals, practicum, or internships must register each semester to be covered by Northeastern University's liability insurance, for which students pay an annual fee. This insurance covers injury to third parties by students who are doing work or completing professional studies outside of Northeastern University's premises. These activities must clearly be part of the student's assigned duties. The liability insurance does not cover willful misconduct. Students or the clinical placement coordinator can request the Office of Risk Services to send evidence confirming coverage to their field site. Students should consult their clinical placement officer, program coordinator, and specialization policies for information about further requirements for liability insurance. If you are not sure if your program is covered under this policy, coverage can be verified through the Office of Risk Services (http://www.northeastern.edu/risk_services).

Advising

The unit director or another faculty member will be appointed by the program director to serve as the student's academic advisor throughout their course of study at the Bouvé graduate school.

The advisor will assist the student in understanding program requirements and in defining career goals and objectives of graduate work. The advisor will also monitor the student's progress toward successful completion of the degree.

Student Advisement Responsibilities

Students share responsibility with their advisor for successful matriculation and progression in their graduate program. In many programs, students are required to make appointments for academic advisement at least twice a year and must regularly update their curriculum plan with their advisor. The curriculum plan is kept on file in the respective program's office. Both student and advisor retain a copy of the curriculum plan. Students must contact their academic advisor prior to making changes to their curriculum plan and must seek assistance regarding academic issues in a timely manner.

Transfer of Credit

A maximum of 9 semester/12 quarter hours of credit obtained at another institution may be accepted toward the current degree, provided that the credits:

1. Consist of work taken at the graduate level for graduate credit, with grades of 3.000 or better
2. Have been earned at an accredited institution
3. Have not been used toward any other degree

Further, these courses must have been taken within five years prior to the transfer and may not be taken in the semester of graduation from Northeastern. Transfer credits will only be accepted at the discretion of the academic department and the Bouvé Office of Graduate Student Services. Grades earned in transferred credits are not counted as part of the overall grade-point average earned at Northeastern.

Students who wish to take a course for transfer at another institution while enrolled at Bouvé must first receive preapproval from their academic advisor and the Bouvé Office of Graduate Student Services. First, the student must submit the Graduate Petition to Transfer Credit and the course description to the student's academic advisor for approval. Once the request is approved by the academic advisor, the student must submit the petition to the Bouvé Office of Graduate Student Services. The Graduate Petition to Transfer Credit form can be found on the [Office of the University Registrar's](http://www.northeastern.edu/registrar/form-gs-xfer-cred.pdf) (<http://www.northeastern.edu/registrar/form-gs-xfer-cred.pdf>) website.

Graduate courses from the Northeastern University College of Professional Studies (CPS) can be considered for transfer only with prior approval of the academic advisor. Courses taken at CPS cannot be considered to fulfill full-time requirements for international students. For consideration of financial aid for CPS courses, check with your financial aid officer.

Students may not transfer courses required for the completion of their program in the last semester of their program.

Course Substitution

A student must obtain approval from the student's academic advisor and the Bouvé Office of Graduate Student Services to substitute a graduate course that was completed for a prior degree. The student must provide official transcripts of completed coursework, accompanied by the respective course syllabi, to the advisor in order to verify its equivalency to the proposed course substitution. The student then must submit the signed Course Substitution Form and the official transcript to the Bouvé Office of Graduate Student Services. If the Course Substitution Form is approved, the student must take a course of equivalent number of credits as a replacement for the substituted course, to fulfill the program's academic requirements. The course must be listed in this catalog as either a core or elective course for the program. The Course Substitution Form can be found in the *Bouvé College Graduate Handbook*.

Academic Progression

Program Status and Progression

All degree requirements must be completed within a maximum of seven years of matriculation, although individual academic programs may require completion in a shorter time frame. Each student is responsible for reviewing the requirements for their particular program. A student's failure or inability to register does not extend the amount of time allowed to complete the program. Students should be registered by the first week of each semester (fall, spring, and, where indicated, summer). Course credits earned in programs of graduate study are valid for a maximum of seven years unless an extension is granted by the program director and the Bouvé associate dean of graduate education.

After establishment of candidacy for the PhD degree, a maximum of five years will be allowed for completion of the degree requirements, unless an extension is granted. In order to progress in clinical courses that are sequenced, a student must receive a passing grade in all prior courses in the sequence. In the event that a student fails a clinical course that is

not part of a sequence, progression is at the discretion of the student's academic advisor and/or the program director. When a student fails a clinical course that is part of a sequence of courses, the course instructor must notify the Bouvé Office of Graduate Student Services. Course material related to the student's failure (e.g., examination reports, clinical reports) must be made available to the student for review.

PROVISIONAL AND CONDITIONAL ACCEPTANCES

A student who is accepted *conditionally* to a graduate program at Bouvé College of Health Sciences must meet the conditions set in the acceptance letter *before* they matriculate into the program and prove that they have fulfilled the stated conditions. Examples of conditions include receipt of official verification of previous degree completion, completion of missing prerequisite courses, receipt of a missing recommendation, standardized test scores, and translation of international documents.

A matriculated student who is accepted *provisionally* to a graduate program at Bouvé College of Health Sciences must meet the conditions set forth in the acceptance letter. Examples of provisions include maintenance of a GPA of 3.000 and completion of all prerequisites as outlined in the acceptance letter.

PROGRAM EXTENSION PROCEDURES

Students may seek extension beyond the seven years to complete their program of study only under documented extenuating circumstances. The student must complete the program extension form and an action plan to complete the degree requirements. The program extension form is available in the *Bouvé Graduate Handbook*. The form and the proposed action plan must be submitted to the program director and to the Bouvé Office of Graduate Student Services for approval. After the form is reviewed, a program extension may be granted. The Bouvé Graduate Program Extension form can be found in the *Bouvé Graduate Handbook*, Appendix 8.

LEAVE OF ABSENCE

If a student plans on being absent for more than one semester, the student must notify the Bouvé Office of Graduate Student Services and submit the leave of absence request through MyNortheastern (<https://my.northeastern.edu>). Students should meet with their academic advisor to discuss their intention to submit a request for a leave of absence. After meeting with their academic advisor, the student should submit the petition through the myNortheastern (<https://my.northeastern.edu>) portal. Students returning from a leave of absence should notify the Bouvé Office of Graduate Student Services of their intent to return at least one month prior to the start of the semester. Students with an approved leave of absence who do not return at the end of the leave of absence period will be withdrawn by the university. Please refer to the Graduate Schools Academic Policies (p. 27) section of the catalog for more information and policies on leave of absences.

WITHDRAWAL PROCEDURES

Students can withdraw from the university only through the myNortheastern (<https://my.northeastern.edu>) portal. *Students are responsible for dropping any courses in which they are currently registered and should have an exit interview with their financial aid advisor.* Faculty members are not responsible to notify the university of a student's withdrawal. For information about withdrawal and refund policies, please refer to the Student Financial Services website (<http://www.northeastern.edu/financialaid/policies>).

GRADING POLICIES

Requirements for fulfillment of a degree in the Bouvé College of Health Sciences graduate school varies by program. Students must consult their individual academic program's requirements, as well as program

directors (*if applicable*), for specific credit and noncredit requirements necessary to achieve a specific degree.

Directed Study Registration

Students who wish to take a directed study course must complete the following process before starting the directed study:

1. Obtain the Graduate Directed Study Registration form from the Office of the University Registrar (<https://registrar.northeastern.edu/article/individual-instruction-registration>) and the Bouvé College of Health Sciences Graduate Directed Study form found in the *Bouvé Graduate Handbook*, Appendix 1.
2. Meet with the faculty member who will supervise the directed study to determine syllabus, course credits, and criteria for completion. Students should include the description of the proposed directed study focus, activities, learning objectives, and how the directed study will be evaluated using measurable criteria.
3. Present both forms to the program director or department chair for review and approval.
4. Submit both signed forms to the Bouvé Office of Graduate Student Services for review and approval.
5. The Directed Study Registration form will be processed by the Office of the University Registrar after it has been verified and approved by the college.

Directed study courses are not intended to substitute for a required course in the program.

Incompletes

An incomplete (I) grade may be reported by the instructor when a student has failed to complete a major component of a required course. Only the course instructor can make the decision to grant an incomplete grade to a student. The student must complete an Incomplete Grade Contract (<https://www.northeastern.edu/registrar/form-inc-grade.pdf>), sign the agreement, obtain the instructor's signature, and leave a copy with the instructor, who will seek approval from the academic dean's office before sending it to the Bouvé Office of Graduate Student Services. The student should keep a copy for their record. Any exception to this policy must be recommended by the college's Academic Standing Committee (ASC) and must be forwarded in writing by the ASC to the registrar for implementation. The agreed-upon course work must be completed within one calendar year from the end of the term in which the course was offered.

Advanced Standing (PhD or MD)

Students with a PhD or MD may be eligible for advanced standing, which is determined on a case-by-case basis. To apply for advanced standing, the student must complete the Advanced Standing form and gain approval from the student's academic advisor and the Bouvé Office of Graduate Student Services. If the request is approved, a student may be exempt from a maximum of two courses (not to exceed 6 credits). The Advanced Standing form can be found in the *Bouvé Graduate Handbook*.

Student's Academic Standing

Academic standing in BCHS is determined by the student's cumulative grade-point average (GPA) and performance in academic and clinical courses that are required by the student's program. All BCHS students are expected to maintain a cumulative GPA of 3.000 each semester to remain in good academic standing and to progress toward graduation. Students who do not maintain a cumulative GPA of 3.000 each semester will be placed on probation. Individual programs may have additional requirements; consult the program's requirements page in this catalog for

details. To transfer credit, students must also earn a grade of B (3.000) or better in graduate courses completed at another institution.

Academic Probation Policy

Academic probation is a period of time when a student must address and remediate academic deficiencies. An action plan to clear the deficiency must be developed by the student, the student's academic advisor, and the specific program graduate committee (if applicable). A student placed on probation will receive written notification from the Bouvé Office of Graduate Student Services. The student's program advisor will also receive notification of probationary status. It is the student's responsibility to write an action plan with the student's academic advisor. The plan should document how the deficiency will be remediated. This action plan must be signed by the advisor and the student and placed in the student's file in the Bouvé Office of Graduate Student Services within one month from the date of the written notification of probation. The student's failure to file an action plan may be cause for dismissal from the program. The action plan must specify the date by which the deficiency will be cleared.

A BCHS graduate student may repeat a course only once to achieve a passing grade and may repeat only two courses during his or her entire program of study. A student may be on probation for only two semesters, or until the course is offered again, unless the advisor approves an action plan that specifies a longer (but definite) period. A student may only be placed on probation twice during enrollment in BCHS and must correct all deficiencies, as specified, in each respective action plan during the applicable probationary period. Failure to remediate the deficiency within the agreed time may result in dismissal from the program. During the period of probation, the student must earn a GPA of 3.000 or better each semester, or the student is subject to dismissal from BCHS. Note that individual graduate programs may have additional requirements that must be included in the probation action plan.

A student will be removed from academic probation after they have attained a cumulative GPA of 3.000, earned a passing grade in a repeated course, and/or demonstrated satisfactory performance in a clinical course.

Financial Awards

Northeastern University and the Bouvé College of Health Sciences offer a variety of financial awards to graduate students. For further information about awards, please refer to the "Financial Aid Assistance" section of the *Graduate Catalog* and the Student Financial Services (<https://studentfinance.northeastern.edu/applying-for-aid/graduate>) website

If a student is offered other grant aid from the university, he or she will only receive the scholarship of higher value.

Stipended Graduate Assistantships (SGAs)

These awards include Research Assistantships and Teaching Assistantships. They provide a stipend and a tuition waiver for up to a maximum of 12 semester hours per term, in exchange for 20 hours of work per week. The maximum number of hours SGAs are permitted to work is 20 hours per week. Students are expected to work through the final exam period, including spring break. Any variation from this schedule is at the discretion of the student's supervisor.

SGAs are generally awarded to PhD students. SGAs must be enrolled in full-time course work (minimum of 6 semester hours per term). In

addition, 100 percent of the student's health insurance will be covered. No fees, including student center fees, are covered by this award.

Graduate Student Scholarships (GSSs)

A limited number of scholarships, up to 9 tuition credits per term, are available for full-time students. These scholarships are awarded by the individual department/school.

Dean's Scholarships

Graduate Dean's Scholarships are awarded to incoming professional master's degree students based on academic achievement. To be eligible for consideration, a student must be in the top one-third of their program's incoming class.

This scholarship provides full-time graduate students with 33 percent of tuition per term to a maximum of 12 credits per term and part-time graduate students with 25 percent of tuition per term.

Yellow Ribbon Awards

Qualifying veterans who enroll at Northeastern will receive grant aid that covers most to all of Northeastern's tuition and fee charges, depending on the selected degree program. Northeastern and the Department of Veterans Affairs cover most to all of the expenses that exceed the cost of attending the University of Massachusetts. Allowances for housing, books, and supplies are included. Learn more (<https://www.northeastern.edu/military/fund-your-education/yellow-ribbon-program>).

Double Husky Awards

The Double Husky Scholarship, available to alumni who have graduated with a Northeastern University degree, provides a tuition discount of up to 25 percent on eligible graduate degree or certificate programs. Students completing pass-through degrees—such as direct entry nursing, freshman-entry Doctor of Education, or freshman-entry Doctor of Physical Therapy—or a PlusOne accelerated master's program, do not qualify for the Double Husky Scholarship. Learn more (https://www.northeastern.edu/graduate/admissions-information/scholarships/double-husky-scholarship/#_ga=25579978717411797851522351759-21038589381518719785) about the Double Husky Scholarship and eligible programs.

Parent and Family Scholarship

Available to parents and siblings of full-time undergraduate day students, the Parent and Family Scholarship provides a tuition discount of 25 percent on more than 110 eligible graduate programs. Learn more (<https://www.northeastern.edu/graduate/admissions-information/scholarships/parent-and-family-scholarship>).

Diversity Fellowship

Each year a limited number of fellowships are awarded to graduate students in an effort to help the university achieve a more diverse graduate student body. A variety of factors may be used for the purpose of increasing diversity at the university, including gender, race, ethnicity, national origin, sexual orientation, disability, or other protected classification consistent with the university nondiscrimination policy.

These awards are recommended by the student's college or academic department (<http://www.northeastern.edu/provost/academics/colleges-schools>). They provide tuition support only and there is no work requirement associated with them.

Martin Luther King, Jr. Graduate Fellowship

The MLK, Jr. Graduate Fellowships are administered through the African-American Institute. These awards are offered annually to African-

American students in full-time graduate programs as long as the student demonstrates satisfactory academic progress and financial need as determined by Student Financial Services. Applicants must complete the financial aid process, as well as an application available from the African-American Institute. Learn more (<http://www.northeastern.edu/aai/mlk-fellowship>).

Graduation Policies

Eligibility to Graduate

Students are eligible for graduation under the following conditions:

- The student is in good academic standing with a cumulative grade-point average of 3.000 or above.
- The student has earned at least the minimum number of credits required to complete the student's program of study.
- The student has fulfilled other program requirements and any outstanding issues.

Apply to Graduate

Students must apply to graduate through myNortheastern (<https://my.northeastern.edu>) and set up a meeting with their academic advisors for academic clearance.

Issuance of Diplomas and Certificates

Diplomas and certificates are issued three times a year (December, May, and, August), but there is only a spring Commencement ceremony. Please visit the Commencement Office website (<https://www.northeastern.edu/commencement>) to confirm eligibility to participate in the spring Commencement ceremony.

Completing a Thesis for a Master's Program

Students completing a thesis as part of the program's academic requirements are required to complete the following at least five business days before the final grade submission deadline for the academic term:

- Upon successful defense of the thesis, the student must have the Thesis Approval form signed by the members of the thesis committee. The Thesis Approval form can be found in the *Bouvé Graduate Handbook*.
- The student must submit an electronic copy of the thesis to ProQuest, following the directions outlined in the University Libraries' (<http://library.northeastern.edu/get-help/theses-dissertations/submit-your-thesis-or-dissertation>) website.
- The student must have the Thesis Approval form signed by a representative from the Bouvé Office of Graduate Student Services.

PhD Program Completion

PhD degree completion has additional requirements.

- The PhD hooding and degree conferral ceremony is only held during the spring semester. PhD students may not be hooded until they have successfully defended their dissertations and completed all academic requirements.
- Students completing a dissertation must complete the following at least five business days before the final grade submission deadline for the academic term:
 - Upon successful defense of the dissertation, the student must have the Dissertation Approval form signed by the dissertation committee members. The Dissertation Approval form can be found in the *Bouvé Graduate Handbook*.

- The student must submit an electronic copy of the dissertation to ProQuest, following the directions outlined in the University Libraries' (<http://library.northeastern.edu/get-help/theses-dissertations/submit-your-thesis-or-dissertation>) website.
- The student must meet with a representative from the Bouvé Office of Graduate Student Services for the exit interview, at which time the Dissertation Approval form will be signed.
- Students must submit a copy of the Survey of Earned Doctorates Certification of Completion (<https://sedsurvey.org>) (SED) to the Bouvé Office of Graduate Student Services before graduation. Instructions for submission of the survey will be sent to students prior to end of their last term.

Academic Dismissal

A student may be dismissed from a graduate program when he or she has failed to maintain academic requirements or has violated a policy that specifies immediate dismissal. All students shall have an opportunity to correct academic deficiencies during an appropriate probationary period before dismissal is instituted, except when the policy specifies "immediate dismissal."

Students may be subject to dismissal under the following conditions. (Note: Additional requirements that are not included in this list, but are specific to the student's major, may also apply.)

- The student exhibits unethical behavior or misconduct in their academic program, practicum, internship, or research.
- The faculty instructor and/or the clinical supervisor determines that the student has demonstrated unsafe or inappropriate behavior in a clinical setting.
- The student does not register for at least one class for two consecutive semesters and does not have an approved leave of absence.
- The student has a cumulative grade-point average below 3.000 at the end of the probationary period specified by the action plan.
- The student does not demonstrate satisfactory performance in achieving the objectives of a clinical course.
- The student fails to meet all the requirements of the program within the specified time limit mandated by the program and has not been given a formal extension.
- The student in a PhD program fails to successfully complete the PhD qualifying/comprehensive exams as stipulated by the program.
- The student fails to progress satisfactorily in research or fails to identify a committee for their thesis or dissertation within the time specified by the policies of the specific program.
- The student has failed to file an action plan within one month of notification of probation.
- The student has failed to meet the requirements of the action plan, including requirements that are specific to the student's major.
- The student has failed three courses or has failed the same course twice.

Dismissal Procedures

Dismissal of a student is initiated by the program director once the basis for the dismissal is provided to and reviewed by the Bouvé Office of Graduate Student Services. The program director will then notify the

student being dismissed. Students may then appeal the dismissal, using the Appeals Process described below.

ACADEMIC AFFAIRS APPEALS PROCESS

Purpose of the Committee

- Northeastern University affirms that it is essential to provide an appeals mechanism to students who believe that they have been erroneously, capriciously, or otherwise unfairly treated.
- The college Academic Affairs Committee (AAC) acts on matters relating to the academic and professional standing of all Bouvé students in the college who have already appeared before the unit's Academic Standing Committee (ASC) and school dean/representative.
- Issues pertaining to academic and co-op status and professional behaviors violations, including but not limited to warning, probation, permission to resume studies, changes in requirements, and repeating courses, fall within the jurisdiction of the AAC. The AAC also considers student appeals relative to academic or cooperative education judgments by faculty, coordinators, or others acting on behalf of the university, when such appeals arise from a violation, misinterpretation, or inequitable application of the academic provisions outlined in the *University Catalog, Cooperative Education Handbook*, or student handbooks.
- The Office of Institutional Diversity and Inclusion handles appeals arising from allegations of discrimination on the basis of sex, sexual orientation, race, color, age, religion, national origin, handicap, or marital status. The Office for Gender Equity and Compliance handles issues related to Title IX. If other allegations remain at the conclusion of those inquiries, then the student may refer them to the dean for review by the AAC of the college.

Student Appeals Procedures

It is the policy of the university that all students shall be treated fairly with respect to evaluations made of their academic performance, standing, and progress. The university presumes that academic judgments by its faculty are fair, consistent, and objective. Students must understand that the substitution of a different academic judgment for that of the original evaluator is a serious intrusion upon teaching prerogatives. Nonetheless, the university believes it is essential to provide an appeals mechanism to students who believe that they were erroneously, capriciously, or otherwise unfairly treated in an academic or cooperative education determination. This includes claims of misinterpretation or inequitable application of any academic provision of the student handbook or faculty handbook. Issues concerning admission or readmission into a program by a graduate student cannot be appealed beyond the college level. Before invoking the appeals procedures, students are always encouraged to speak informally to their instructors or academic advisors about any determination or grade about which they have questions. If students choose to pursue an appeal, the process is described in the appeals section that follows.

Scientific or Research Misconduct

Scientific or research misconduct is defined as fabrication, falsification, plagiarism, or other practices that seriously deviate from those that are commonly accepted within the academic and scientific community for proposing, conducting, or reporting research and does not include honest error or honest differences in interpretation or judgments of data. (Further information can be obtained from the U.S. Office of Research Integrity, Department of Health and Human Services). Possible incidences of misconduct are to be reported immediately to the Office of Student Conduct and Conflict Resolution, who will initiate the appropriate procedures. Findings of scientific or research misconduct cannot be appealed through the process below.

Levels of the Appeal Process

Prior to submitting an appeal to the college AAC, the student must attempt to resolve the problem with the faculty member, coordinator, or other individual acting on behalf of the university, according to procedures outlined in the university catalogs and/or student handbooks.

Unit level: Students who feel they have been erroneously, capriciously, or otherwise unfairly treated with the informal communication and decision in the previous step may proceed with an appeal through their unit's AAC. Students must follow the process in accordance with unit policies and procedures. If the timeline is not defined, a student shall submit a request for an appeal within 20 business days. The unit's AAC must provide the student with a written report of the finding(s) and decision within 10 business days.

School level: If the student believes he or she has been erroneously, capriciously, or otherwise unfairly treated with the committee's decision, he or she may pursue a secondary appeal to the school dean. In schools where a dean is not in place, the department chair or equivalent will serve in this role. The student must request, in writing, within 10 business days an appeal hearing. The school dean, or representative, shall provide the student or involved faculty member with a written report of his or her finding(s) and decision within 10 business days.

College level: The college AAC hears cases that have been unsatisfactorily resolved at the prior school and unit levels and that have met the requirements of appeals set forth by the university, which refers to an appeal mechanism for "students who believe that they have been erroneously, capriciously, or otherwise unfairly treated."

University level: If the student believes he or she has been erroneously, capriciously, or otherwise unfairly treated with the college dean's disposition of the matter, he or she may pursue the matter further, if applicable, in accordance with the university's student catalogs and/or student handbooks.

Initiation of Action

- Students wishing to bring an appeal before the college AAC must first consult with their appointed academic advisor, or when the appeal involves the academic advisor, a member of the Bouvé Graduate Office or the Office of Student Services (OSS); from here on called the appeal advisor. The student must submit all appropriate documents to their appeal advisor, including a Bouvé College of Health Sciences General Petition form, all previous appeal decisions, and academic transcripts. The appeal advisor will notify the chair of the college AAC that a student has submitted an appeal for review. The appeal advisor will inform the student of the time and place of the college's AAC meeting.
- The chair of the college AAC will ensure a panel is convened to hear the appeal within 10 business days.
- The Academic Affairs Committee Appeals Panel (the college Appeal Panel) includes three voting members of the AAC that appropriately represent the breadth and depth of programs within the college. At minimum, two schools will be represented on the panel and at least one member teaches within a similar degree-level program. Members of the panel shall have no known conflicts of interest with the student.
- The chair for the college Appeal Panel shall be selected from among three voting members of the AAC that appropriately represent the breadth and depth of programs within the college. At minimum, two schools will be represented on the panel and at least one member teaches within a similar degree-level program. Members of the panel shall have no known conflicts of interest with the student.

- The chair for the college Appeal Panel shall be selected from among the panel members.

Review of Appeals

- The appeal advisor will submit copies of the student's appeal to the chair of the college Appeal Panel prior to the meeting. Documents will be circulated to the panel members.
- The chair of the department or unit's ASC for the student presenting the appeal shall be invited by the chair of the college Appeal Panel to attend the meeting. If the chair is unable to attend, a representative of the department or unit ASC may attend in his or her place.
- The student's appeal advisor shall be invited by the chair of the college Appeal Panel to attend the meeting.
- The student is required to appear before the college Appeal Panel to present or discuss his or her appeal in person but may forfeit this right in writing. Student advocates, as defined by the university, are not permitted to attend a student's appeal meeting.
- Deliberation of the appeal will be made by the college Appeal Panel during the scheduled meeting, assuming that all relevant and appropriate information has been made available to the panel by the parties involved. If more information is needed, the decision may be postponed until a future meeting.
- The chair of the college Appeal Panel will notify the college dean of the findings and recommended decision. The college dean will have the final decision.
- The college dean will notify the student and other relevant parties of the decision in writing no later than 10 business days after the decision.
- If the student believes he or she has been erroneously or capriciously treated with the college dean's disposition of the matter, he or she may pursue the matter further, if applicable, in accordance with the university's student catalogs and/or student handbooks.

Applied Psychology

Website (<http://www.northeastern.edu/bouve/ap>)

Robert J. Volpe, PhD

Professor & Interim Chair

404 International Village
617.373.7970
617.373.8892 (fax)
caep@northeastern.edu

Graduate programs in the Department of Applied Psychology reflect Northeastern University's tradition of practice-oriented education with an ecological and multicultural focus. Faculty and students come from diverse ethnic and cultural backgrounds, providing an enriching learning experience. The department is a scientist-practitioner-based unit that generates new psychological knowledge through research, and the translation of research, to applications that:

1. Optimize development and learning
2. Promote mental and physical health from birth through the life span

The Bouvé College of Health Sciences emphasizes experiential and field-based learning, interdisciplinary and global knowledge, and integration of science and practice. The Department of Applied Psychology seeks to produce students who are well prepared to become counseling and psychology professionals in a variety of educational, government, community, organizational, and private settings. Our doctoral programs provide excellent educational opportunities for those interested in

professional psychology with specialized training for future careers in academic or practice positions as licensed psychologists. As a Bouvé student, you have an opportunity to acquire knowledge and competency needed for a lifetime of personal fulfillment and professional achievement.

Programs

Doctor of Philosophy (PhD)

- Counseling Psychology (p. 239)
- School Psychology (p. 240)

Certificate of Advanced Graduate Studies (CAGS)

- Applied Behavior Analysis (p. 241)
- Counseling Psychology (p. 242)
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Master of Science (MS)

- Applied Behavior Analysis (p. 242)
- College Student Development and Counseling (p. 243)
- School Psychology (p. 244)

Master of Science in Counseling Psychology (MSCP)

- Counseling Psychology (p. 243)

Graduate Certificate

- Applied Behavior Analysis (p. 245)
- Early Intervention (p. 245)

Counseling Psychology, PhD

The Doctor of Philosophy in Counseling Psychology program is accredited by the American Psychological Association (APA). It is designed to train the next generation of mental health professionals. The program offers doctoral education and training in psychology and seeks to prepare students for entry-level practice in counseling psychology. Doctoral-level counseling psychologists conduct research, teach at the university level, supervise students and professionals, consult with community agencies, and provide clinical services to people across the developmental life span. Counseling psychologists also enhance the science of health promotion and health psychology and emphasize community-based interventions. It is the mission of the PhD in Counseling Psychology program to train multiculturally competent counseling psychologists who are clinically adept in multiple settings with a variety of psychological and health-related issues and who are able to conceptualize, conduct, and evaluate research across biological, cultural, and relational systems in numerous social contexts, such as families, schools, neighborhoods, and communities.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Annual review
- Four qualifying examinations completed in the first three years—research, ethics, assessment, and intervention
- Research team during the first year (two consecutive semesters)
- Dissertation proposal
- Dissertation defense

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Basic		
CAEP 6390	History and Systems of Psychology	3
CAEP 6394	Advanced Multicultural Psychology	3
CAEP 7750	Biological Bases of Behavior	3
CAEP 7755	Cognitive and Affective Bases of Behavior	3
CAEP 7756	Social Psychology in an Organizational and Ecological Context	3
Fieldwork		
Complete 8 semester hours from the following:		8
CAEP 7741	Advanced Fieldwork 1	
CAEP 7742	Advanced Fieldwork 2	
CAEP 7743	Advanced Fieldwork 3	
CAEP 7744	Advanced Fieldwork 4	
Clinical		
CAEP 6350	Introduction to Cognitive Assessment	3
CAEP 6352	Personality Assessment	3
CAEP 7710	Advanced Clinical Assessment	3
CAEP 7720	Advanced Clinical Interventions	3
CAEP 7758	Doctoral Seminar in Contemporary Theories of Psychotherapy	3
CAEP 7778	Doctoral Seminar: Leadership, Consultation, and Supervision	3
Elective		
Complete 3 semester hours from the following. Other electives or alternatives may be chosen in consultation with faculty advisor.		3
CAEP 5200	Motivational Interviewing in a Healthcare Setting	
CAEP 7771	Research Team Experience 1 (repeatable for up to 3 credits)	
CAEP 7772	Research Team Experience 2 (repeatable for up to 3 credits)	
CAEP 7773	Research Team Experience 3 (repeatable for up to 3 credits)	
CAEP 7774	Research Team Experience 4 (repeatable for up to 3 credits)	
CAEP 7976	Directed Study	
CAEP 8553	Advanced Counseling Practicum	
Professional		
Complete 6 semester hours from the following:		6
CAEP 7701	Doctoral Seminar in Counseling Psychology (repeatable 3 times for 3 credits)	
CAEP 7732	Legal and Ethical Issues in Community and Educational Settings	
Research		
CAEP 7711	Measurement: Advanced Psychometric Principles	3
CAEP 7712	Intermediate Statistical Data Analysis Techniques	3
CAEP 7716	Advanced Research and Data Analyses 2	3

Internship

Complete 3 semester hours from the following:		3
CAEP 7798	Doctoral Internship 1	
CAEP 7799	Doctoral Internship 2	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course once:		
CAEP 9990	Dissertation	0

Program Credit/GPA Requirements

62 total semester hours required
Minimum 3.000 GPA required

School Psychology, PhD

Northeastern University's Doctor of Philosophy in School Psychology program is accredited by the American Psychological Association (APA) and the National Association of School Psychologists (NASP). The program is designed to prepare the next generation of leaders in school psychology. The ecological perspective and scientist-practitioner training model provide the foundation for the program's educational goals. Students have an opportunity to learn how to conduct research, to use research to inform practice, and to contribute to the scientific foundation of professional practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Students who enter with a master's degree develop an individualized program of study with their advisor, which requires a minimum of 50 semester hours of credit.

Milestones

Comprehensive examination
Annual review
Mentored research project
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Professional		
CAEP 6365	Seminar in School Psychology	3
CAEP 7732	Legal and Ethical Issues in Community and Educational Settings	3
Basic		
CAEP 6206	Learning Principles	3
CAEP 6218	Infant, Child, and Adolescent Development	3
CAEP 6390	History and Systems of Psychology	3
CAEP 7750	Biological Bases of Behavior	3
CAEP 7755	Cognitive and Affective Bases of Behavior	3
CAEP 7756	Social Psychology in an Organizational and Ecological Context	3
Multicultural Competency		

CAEP 6203	Understanding Culture and Diversity	3
CAEP 6394	Advanced Multicultural Psychology	3
Assessment and Intervention		
<i>Course Work</i>		
CAEP 6247	Child and Adolescent Psychopathology	3
CAEP 6345	Learning Problems: Educational, Biological, and Ecological Perspectives	3
CAEP 6347	Behavior Management	3
CAEP 6350	Introduction to Cognitive Assessment	3
CAEP 6353	Curriculum-Based Assessment and Instruction	3
CAEP 6354	Social, Emotional, and Behavioral Assessment	3
CAEP 6360	Consultation and Program Evaluation	3
CAEP 6399	Clinical Skills in Counseling Psychology	3
CAEP 6401	Counseling Children and Adolescents in Schools 1	3
CAEP 6402	Counseling Children and Adolescents in Schools 2	3
CAEP 7710	Advanced Clinical Assessment	3
CAEP 7720	Advanced Clinical Interventions	3
<i>Practicum</i>		
CAEP 6400	Prepracticum in School Psychology	1
CAEP 8415	Practicum in School Psychology 1	2
CAEP 8416	Practicum in School Psychology 2	2
<i>Fieldwork</i>		
CAEP 7741	Advanced Fieldwork 1	1,2
CAEP 7742	Advanced Fieldwork 2	1,2
CAEP 7743	Advanced Fieldwork 3	1,2
CAEP 7744	Advanced Fieldwork 4	1,2
<i>Internship</i>		
CAEP 7798	Doctoral Internship 1	1-3
CAEP 7799	Doctoral Internship 2	2
Research		
<i>Research Course Work</i>		
CAEP 6202	Research, Evaluation, and Data Analysis	3
CAEP 7711	Measurement: Advanced Psychometric Principles	3
CAEP 7712	Intermediate Statistical Data Analysis Techniques	3
CAEP 7715	Advanced Research and Data Analyses 1	3
CAEP 7716	Advanced Research and Data Analyses 2	3
CAEP 7777	Doctoral Seminar: Program Planning and Evaluation	3
<i>Research Teams</i>		
CAEP 7771	Research Team Experience 1	1
CAEP 7772	Research Team Experience 2	1
CAEP 7773	Research Team Experience 3	1

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CAEP 9990	Dissertation	

Program Credit/GPA Requirements

104 total semester hours required
Minimum 3.000 GPA required

Applied Behavior Analysis, CAGS

The Certificate of Advanced Graduate Study (CAGS) program prepares graduates to assume supervisory behavior analyst roles in schools and agencies and to serve as independent consultants. Additionally, it seeks to give graduates expertise in a specific clinical area related to applied behavior analysis, such as early intervention, public policy, or autism. This program is designed for the student who possesses a graduate degree in either Psychology or Education. The Behavior Analyst Certification Board (BACB) has verified this course sequence as meeting the course requirements for eligibility to take the Board Certified Behavior Analyst (BCBA) examination.

This program includes 6 core courses in behavior analysis that explore the principles and procedures of applied behavior analysis in-depth and address its philosophical underpinnings. The 6 core courses are followed by 4 additional courses in a specific content area related to behavior analysis. These courses, which are related, explore the related clinical issue in-depth. Students may elect to complete their supervised experience hours by taking Intensive Practicum in Applied Behavior Analysis 1 (CAEP 8417) and Intensive Practicum in Applied Behavior Analysis 2 (CAEP 8418), in addition to the 10 required courses.

Courses are delivered in an online format. Students attend lectures virtually and view supplementary material on their own schedules, taking advantage of technological advances that promote student learning and increase student-to-instructor and student-to-student communication.

Students take one or two courses each academic term, and courses are offered during the fall, spring, and summer full semesters. Behavior Assessment (CAEP 6327) and Research and Design Methods (CAEP 6328) serve as prerequisite courses to the remaining courses in the program.

Professional Portfolio

The capstone for the program is the professional portfolio. This portfolio, which is compiled electronically, documents the student's acquisition of critical behavioral procedures and competency in critical clinical skills. These skills, each of which is associated with a specific project, include:

- Preference and reinforcer assessment
- Functional assessment of problem behavior
- Task analysis
- Discrete trial
- Stimulus equivalence
- Consequence reinforcement
- Conditioned reinforcement
- Literature review

Each semester, students complete assignments associated with the above clinical skills, and each assignment culminates in professional documents to be included in the student's professional portfolio. A faculty member reviews and signs each assignment in the professional portfolio. The faculty member's signature indicates that the student has achieved the faculty-established standards for the project. Graduates are encouraged to use their professional portfolio when applying for employment.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Basic		
CAEP 6327	Behavior Assessment	3
CAEP 6328	Research and Design Methods	3
CAEP 6329	Service Administration	3
CAEP 6331	Advanced Learning Seminar 1	3
CAEP 6334	Applied Programming Seminar 1	3
CAEP 6336	Systematic Inquiry 1	3
Advanced		
Complete 3 semester hours from the following:		3
CAEP 6324	Programmed Learning	
CAEP 6332	Advanced Learning Seminar 2	
CAEP 6335	Applied Programming Seminar 2	
CAEP 6337	Systematic Inquiry 2	
Specialization Area		
Complete specialization area in consultation with your faculty advisor.		9

Practicum

Note: The intensive practicum is optional. Consult your faculty advisor.

Code	Title	Hours
CAEP 8417	Intensive Practicum in Applied Behavior Analysis 1	2
CAEP 8418	Intensive Practicum in Applied Behavior Analysis 2	2

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Counseling Psychology, CAGS

The Certificate of Advanced Graduate Study (CAGS) in Counseling Psychology is for students with a highly related master's degree seeking to enhance their professional skills. This program does not meet licensure requirements in Massachusetts. It is a 30-semester-hour course of study. This program is individually tailored to fulfill a student's professional focus.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Required Core		
In consultation with faculty advisor, complete 24 semester hours in the following subject area:		24
CAEP		

Internship		
CAEP 8510	Internship in Counseling Psychology 1	3
CAEP 8511	Internship in Counseling Psychology 2	3

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Applied Behavior Analysis, MS

The Master of Science in Applied Behavior Analysis (ABA) program prepares graduates to assume supervisory behavior analyst roles in schools and service agencies and to serve as independent consultants. The Behavior Analyst Certification Board (BACB) has verified this course sequence as meeting the course requirements for eligibility to take the Board Certified Behavior Analyst (BCBA) examination. While retaining a practitioner focus, this program gives students in-depth knowledge of topics such as conditioned reinforcement, motivational influences on behavior, and errorless teaching procedures. Courses explore the principles and procedures of applied behavior analysis in-depth and address its philosophical underpinnings. With this background, graduates are prepared to address the most complex behavior problems and learning challenges. Students complete 6 core courses, plus an additional 4 courses that extend the student's familiarity with clinical procedures and with the research supporting their use. Students may elect to complete their supervised experience hours by taking Intensive Practicum in Applied Behavior Analysis 1 (CAEP 8417) and Intensive Practicum in Applied Behavior Analysis 2 (CAEP 8418), in addition to the 10 required courses.

Courses are delivered in an online format. Students attend lectures virtually and view supplementary material on their own schedules, taking advantage of technological advances that promote student learning and increase student-to-instructor and student-to-student communication.

Students take one or two courses each academic term, and courses are offered during the fall, spring, and summer full semesters. Behavior Assessment (CAEP 6327) and Research and Design Methods (CAEP 6328) serve as prerequisite courses to the remaining courses in the program.

Professional Portfolio

The capstone for the program is the professional portfolio. This portfolio, which is compiled electronically, documents the student's acquisition of critical behavioral procedures. This portfolio documents the student's behavioral competency in critical clinical skills. These skills, each of which is associated with a specific project, include:

- Preference and reinforce assessment
- Functional assessment of problem behavior
- Task analysis
- Discrete trial
- Stimulus equivalence
- Conditioned reinforcement
- Literature review

Each semester, students complete assignments associated with the above clinical skills, and each assignment culminates in professional documents to be included in the student's professional portfolio. A faculty member reviews and signs each assignment in the professional portfolio. The faculty member's signature indicates that the student has achieved the faculty-established standards for the project. Graduates

are encouraged to use their professional portfolio when applying for employment.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Professional Portfolio

- Preference and reinforce assessment
- Functional assessment of problem behavior
- Task analysis
- Discrete trial
- Stimulus equivalence
- Conditioned reinforcement
- Literature review

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Basic		
CAEP 6327	Behavior Assessment	3
CAEP 6328	Research and Design Methods	3
CAEP 6329	Service Administration	3
CAEP 6331	Advanced Learning Seminar 1	3
CAEP 6334	Applied Programming Seminar 1	3
CAEP 6336	Systematic Inquiry 1	3
Advanced		
CAEP 6324	Programmed Learning	3
CAEP 6332	Advanced Learning Seminar 2	3
CAEP 6335	Applied Programming Seminar 2	3
CAEP 6337	Systematic Inquiry 2	3

Practicum

Note: The intensive practicum is optional. Consult your faculty advisor.

Code	Title	Hours
CAEP 8417	Intensive Practicum in Applied Behavior Analysis 1	2
CAEP 8418	Intensive Practicum in Applied Behavior Analysis 2	2

Program Credit/GPA Requirements

30 total semester hours required
 Minimum 3.000 GPA required

College Student Development and Counseling, MS

The College Student Development and Counseling program (CSDC) at Northeastern University aims to create mindful, action-oriented leaders, specifically in the fields of higher education and student affairs administration. The program focuses on counseling, college student development, the history and philosophy of the student affairs profession, and the organization and administration of the field. The program offers emerging professionals the opportunity to obtain the academic and experiential background that enables them to design, create, and administer student personnel programs that teach leadership, foster student development, value diversity, and contribute to the academic experiences of college students. College Student Development and

Counseling students are also supported with individual research projects. The program offers a global perspective to the practice of student affairs and student services.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestone

Portfolio

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Student Affairs Administration		
CAEP 6301	Planning and Administering Student Affairs	3
CAEP 6302	Law and Ethics in Higher Education	3
CAEP 6303	Financial Aspects of Higher Education	3
CAEP 6305	Special Topics in Higher Education	3
CAEP 6235	Vocational, Education, and Career Development	3
College Student Development		
CAEP 6200	Introduction to Counseling: Theory and Process in an Ecological Context	3
CAEP 6203	Understanding Culture and Diversity	3
CAEP 6230	Health Issues in Counseling	3
CAEP 6300	Introduction to College Student Development	3
Professional Practice		
CAEP 6215	Groups: Dynamics and Leadership	3
CAEP 8402	College Student Development Practicum 1	3
CAEP 8403	College Student Development Practicum 2	3
Research and Evaluation		
CAEP 6202	Research, Evaluation, and Data Analysis	3
CAEP 6262	Evaluation and Outcomes Assessment of Community, School, and Health-Related Programs	3

Program Credit/GPA Requirements

42 total semester hours required
 Minimum 3.000 GPA required

Counseling Psychology, MSCP

The Master of Science in Counseling Psychology (MSCP) program at Northeastern is committed to the development of competent Licensed Mental Health Counselors (LMHC) through the disciplinary studies and contemporary professional practice of counseling psychology. The program complies with licensing regulations for mental health counselors in the Commonwealth of Massachusetts and is unique in its offer of a choice of specific specializations to gain additional depth in selected areas within the general Master of Science program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Seminar		
CAEP 6380	Seminar in Feminist Psychology	3
Required Core		
CAEP 6200	Introduction to Counseling: Theory and Process in an Ecological Context	3
CAEP 6201	Introduction to Assessment	3
CAEP 6203	Understanding Culture and Diversity	3
CAEP 6220	Development Across the Life Span	3
CAEP 6235	Vocational, Education, and Career Development	3
CAEP 6242	Psychopathology: Diagnosis and Treatment Planning	3
CAEP 6250	Individual Interventions	3
CAEP 6260	Community Counseling Psychology	3
CAEP 6282	Ethics and Professional Development	3
CAEP 6287	Group Counseling	3
CAEP 6375	Substance Use and Treatment	3
CAEP 6399	Clinical Skills in Counseling Psychology	3
Research		
CAEP 6202	Research, Evaluation, and Data Analysis	3
Clinical		
CAEP 6338	Clinical Practice Supervision	1-3
Practicum		
CAEP 8401	Practicum in Counseling Psychology	3
Internship		
CAEP 8510	Internship in Counseling Psychology 1	3
CAEP 8511	Internship in Counseling Psychology 2	3
Electives		
Code	Title	Hours
Complete 9 semester hours from the following. Other electives or alternatives may be chosen in consultation with faculty advisor.		9
CAEP 6215	Groups: Dynamics and Leadership	
CAEP 6218	Infant, Child, and Adolescent Development	
CAEP 6222	Human Sexuality	
CAEP 6230	Health Issues in Counseling	
CAEP 6247	Child and Adolescent Psychopathology	
CAEP 6283	Brief Therapies	
CAEP 6286	Family Counseling Interventions	
CAEP 6290	Reality Therapy	
CAEP 6390	History and Systems of Psychology	
CAEP 6394	Advanced Multicultural Psychology	
CAEP 7720	Advanced Clinical Interventions	
CAEP 7758	Doctoral Seminar in Contemporary Theories of Psychotherapy	

PHTH 6320	Qualitative Methods in Health and Illness
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Program Credit/GPA Requirements

60 total semester hours required
Minimum 3.000 GPA required

School Psychology, MS/CAGS

Northeastern University's Master of Science/Certificate of Advanced Graduate Study (CAGS) in School Psychology is approved by the National Association of School Psychologists (NASP) and the Massachusetts Department of Elementary and Secondary Education. The overarching purpose of the program is to develop highly competent school psychologists. Some students also choose to specialize in either early intervention or applied behavior analysis. The early intervention training option is designed to prepare school psychologists to work with infants and toddlers and their families in community and related agencies, on interdisciplinary teams, and on the transition to school. The applied behavior analysis training option is designed to prepare school psychologists to address the learning and behavioral needs of children and adolescents with challenging behaviors in school, home, and community settings, including children with autism spectrum disorders.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

MS Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Clinical/Applied		
CAEP 6201	Introduction to Assessment	3
CAEP 6347	Behavior Management	3
CAEP 6350	Introduction to Cognitive Assessment	3
CAEP 6400	Prepracticum in School Psychology	1
Foundations		
CAEP 6202	Research, Evaluation, and Data Analysis	3
CAEP 6203	Understanding Culture and Diversity	3
CAEP 6206	Learning Principles	3
CAEP 6218	Infant, Child, and Adolescent Development	3
CAEP 6247	Child and Adolescent Psychopathology	3
CAEP 6365	Seminar in School Psychology	3
CAEP 7750	Biological Bases of Behavior	3

CAGS Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Clinical/Applied		
CAEP 6353	Curriculum-Based Assessment and Instruction	3
CAEP 6354	Social, Emotional, and Behavioral Assessment	3
CAEP 6345	Learning Problems: Educational, Biological, and Ecological Perspectives	3
CAEP 6360	Consultation and Program Evaluation	3

CAEP 6399	Clinical Skills in Counseling Psychology	3
CAEP 6401	Counseling Children and Adolescents in Schools 1	3
CAEP 6402	Counseling Children and Adolescents in Schools 2	3
Practicum		
CAEP 8415	Practicum in School Psychology 1	2
CAEP 8416	Practicum in School Psychology 2	2
Internship		
CAEP 8501	Internship in School Psychology 1	3
CAEP 8502	Internship in School Psychology 2	3

Optional Concentration

APPLIED BEHAVIOR ANALYSIS

Code	Title	Hours
CAEP 6327	Behavior Assessment	3
CAEP 6328	Research and Design Methods	3
CAEP 6329	Service Administration	3
CAEP 6336	Systematic Inquiry 1	3
CAEP 8417	Intensive Practicum in Applied Behavior Analysis 1	2
CAEP 8418	Intensive Practicum in Applied Behavior Analysis 2	2

Optional Specialization

EARLY INTERVENTION

Code	Title	Hours
CAEP 5150	Early Intervention: Family Systems	3
CAEP 8425	Early Intervention Practicum 1	2
SLPA 6335	Early Intervention: Assessment and Intervention	3
CAEP 8426	Early Intervention Practicum 2	2
CAEP 6202	Research, Evaluation, and Data Analysis	3

MS/CAGS Program Credit/GPA Requirements

62 total semester hours required
Minimum 3.000 GPA required

Applied Behavior Analysis, Graduate Certificate

The goal of the Graduate Certificate in Applied Behavior Analysis is to prepare graduates to assume supervisory behavior analyst roles in schools and service agencies and to serve as independent consultants. This program is designed for the student who possesses a graduate degree in either psychology or education. The Behavior Analyst Certification Board (BACB) has verified this course sequence as meeting the course requirements for eligibility to take the Board Certified Behavior Analyst (BCBA) examination.

This program includes six core courses in behavior analysis that explore the principles and procedures of applied behavior analysis in-depth and address its philosophical underpinnings. Students may elect to complete their supervised experience hours by taking Intensive Practicum in Applied Behavior Analysis 1 (CAEP 8417) and Intensive Practicum in Applied Behavior Analysis 2 (CAEP 8418), in addition to the six required courses.

Courses are delivered in an online format. Students attend lectures virtually and view supplementary material on their own schedules, taking

advantage of technological advances that promote student learning and increase student-to-instructor and student-to-student communication.

Students take one or two courses each academic term, and courses are offered during the fall, spring, and summer full semesters. Behavior Assessment (CAEP 6327) and Research and Design Methods (CAEP 6328) serve as prerequisite courses to the remaining courses in the program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Basic Core		
CAEP 6327	Behavior Assessment	3
CAEP 6328	Research and Design Methods	3
CAEP 6329	Service Administration	3
CAEP 6331	Advanced Learning Seminar 1	3
CAEP 6334	Applied Programming Seminar 1	3
CAEP 6336	Systematic Inquiry 1	3

Intensive Practicum

Note: The intensive practicum is optional. Consult your faculty advisor.

Code	Title	Hours
CAEP 8417	Intensive Practicum in Applied Behavior Analysis 1	2
CAEP 8418	Intensive Practicum in Applied Behavior Analysis 2	2

Program Credit/GPA Requirements

18 total semester hours required
Minimum 3.000 GPA required

Early Intervention, Graduate Certificate

Northeastern University's Certificate Program in Early Intervention is an interdisciplinary, preservice training program that is designed to fulfill requirements for certification as an early intervention specialist, at the advanced provisional level, as set forth by the Massachusetts Department of Public Health (DPH). The interdisciplinary nature of the program is facilitated by the interaction of graduate students from school psychology, counseling psychology, physical therapy, speech and language pathology, and undergraduate students from human services and psychology.

The goals for the early intervention certificate program are:

- To prepare personnel to provide services to infants and toddlers with disabilities and their families, from linguistically and culturally diverse backgrounds in urban environments
- To prepare personnel who have attained all competencies relative to early intervention, specified by the Massachusetts DPH, and that are consistent with best practice and research
- To prepare personnel in an interdisciplinary manner, drawing from Northeastern University's multidisciplinary resources
- To prepare personnel to function effectively across teams (individualized family service plan teams, community teams,

interagency teams) and to understand the roles of their interdisciplinary teammates

Upon graduation, students are eligible for employment in an early intervention service delivery setting.

The program is delivered in a hybrid format. Classes meet on campus one day each month, and additional course content is delivered through online distance education. The program can be taken alone or integrated with bachelor's, master's, or clinical doctoral degree programs. Personnel who are working in the field may use their work site for field training. Degree-bearing programs incorporate the courses in a variety of arrangements, meaning that some of the program's classes stand in place for others and/or serve as electives. These program plans are worked out with students' advisors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all courses.

Code	Title	Hours
Required Core		
CAEP 5150	Early Intervention: Family Systems	3
CAEP 5151	Early Intervention: Infant and Toddler Development, Risk, and Disability	3
CAEP 5152	Early Intervention: Planning and Evaluating Services	3
SLPA 6335	Early Intervention: Assessment and Intervention	3
Practicum		
CAEP 8425	Early Intervention Practicum 1	2
CAEP 8426	Early Intervention Practicum 2	2

Program Credit/GPA Requirements

16 total semester hours required

Minimum 3.000 GPA required

Communication Sciences and Disorders

Website (<http://www.northeastern.edu/bouve/slpa>)

Lorraine Book, PhD, CCC-SLP

Interim Chair and SLP Graduate Program Director

Sandra Cleveland, AuD, CCC-A

Associate Clinical Professor and AuD Program Director

MS in Speech-Language Pathology Program

226 Forsyth Building

617.373.7577

617.373.2239 (fax)

Lorraine Book, SLP Graduate Program Director, l.book@northeastern.edu

Doctor of Audiology Program

226 Forsyth Building

617.373.2496

617.373.8756 (fax)

Sandra Cleveland, AuD Program Director, sa.cleveland@northeastern.edu

We are a learning community in which faculty and students support each other's learning across the life span. Our department mission is to educate students to the highest levels of professionalism, consistent with American Speech-Language-Hearing Association (ASHA) and Northeastern University accreditation standards and Massachusetts licensure requirements; to provide them with an interprofessional and practice-oriented education in our urban university environment; to provide them with research experiences based on the highest standards of scientific knowledge; to provide them with clinical experiences with clients, patients, and families from a diverse population base using an evidence-informed practice approach; to evaluate their progress using both formative and summative assessment measures.

Our faculty engage in continuous learning both inside and outside the department to be current in recent research and to contribute to that knowledge base. They use, develop, and address in their teaching technology that improves the hearing, communication, respiration, and swallowing skills of individuals at a variety of age and skill levels.

Programs

Master of Science (MS)

- Speech-Language Pathology (p. 246)

Speech-Language Pathology, MS

Adhering to the highest professional standards, the speech-language pathology (SLP) graduate program seeks to prepare future speech-language pathologists for the rigors of clinical practice in educational and healthcare settings. Graduates of the program will influence society in profound ways—for example, enabling children with autism to communicate effectively, relieving adolescents' fears of speaking dysfluently in the classroom, and helping stroke survivors resume activities in which they had previously participated. The comprehensive program of study emphasizes teamwork and interdisciplinary approaches to complex service delivery issues. SLP graduate students acquire the knowledge and skills needed for a lifetime of professional achievement and social contribution.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Disorders		
Requires 31 semester hours:		
SLPA 5201	Diagnostic Testing in Speech-Language Pathology	1
SLPA 6219	Aural Rehabilitation (or elective)	3-4
SLPA 6303	Stuttering	3
SLPA 6304	Augmentative and Alternative Communication	3
SLPA 6305	Articulation and Phonology	3
SLPA 6306	Speech-Language Disorders in Children	3
SLPA 6307	Voice Disorders	3
SLPA 6308	Dysphagia	3
SLPA 6309	Speech-Language Disorders in Adults	3
SLPA 6321	Motor Speech Disorders	3

SLPA 6330	Language Literacy 1	0.5
SLPA 6337	Language Literacy Experiential Program	0.5
SLPA 6338	Language Literacy 2	2
Science		
SLPA 5109	Neurology of Communication	3
SLPA 6301	Speech Science	3
Research		
SLPA 6211	Research and Evidence-Based Practice	3
SLPA 6420	Practical Statistics for Speech-Language Pathology and Audiology	3
Practicum		
SLPA 6415	Speech-Language Pathology Advanced Clinical Practicum 1	3
SLPA 6416	Speech-Language Pathology Advanced Clinical Practicum 2	2
SLPA 6417	Speech-Language Pathology Advanced Clinical Practicum 3	2
SLPA 6418	Speech-Language Pathology Advanced Clinical Practicum 4	2

Program Credit/GPA Requirements

52 total semester hours required

Minimum 3.000 GPA required

Health Sciences

Website (<https://bouve.northeastern.edu/health-sciences>)

Shan Mohammed, MD, MPH

Clinical Associate Professor & Interim Chair

316 Robinson Hall

617.373.7729

617.373.2968 (fax)

The Department of Health Sciences at the Bouvé College of Health Sciences at Northeastern University provides a unique, transdisciplinary setting that incorporates academics, research, and practice and seeks to prepare students for a wide range of career paths. We offer engaging undergraduate academic programs that enable students to major or minor in health sciences, as well as several graduate degree programs, including the Master of Public Health with Concentration in Urban Health, the Master of Science in Exercise Science with Concentration in Physical Activity and Public Health, the Doctor of Philosophy in Population Health, and several dual-degree programs offered in conjunction with the School of Pharmacy, the School of Law, the Exercise Science Program, the Health Informatics Program, and the Physician Assistant Program.

Our diverse faculty has expertise in the fields of population health, health disparities, nutritional epidemiology, social epidemiology, exercise science, medical sociology, public policy, personal health technologies, neurodevelopmental disorders, and mental health, among many more. Students have the opportunity to work side by side with faculty in conducting cutting-edge research in these fields. We also have research staff highly skilled in providing unique, specialized dietary assessment services.

In line with Northeastern's commitment to interdisciplinary research and urban engagement, we teach and work closely with many other schools, centers, and departments in the university, including the Institute on Urban Health Research (IUHR), the Center for Community Health Education Research and Service (CCHERS), the Social Science

Environmental Health Research Institute (SSEHRI), and the Center for Health Policy and Healthcare Research (CHPHR), as well as community agencies and neighborhood health centers in the local Boston area and beyond.

Programs

Doctor of Philosophy (PhD)

- Population Health (p. 228)

Master of Science (MS)

- Exercise Science with Concentration in Physical Activity and Public Health (p. 249)

Master of Public Health (MPH)

- Master of Public Health (p. 248)

Dual Degree

- Law and Urban Public Health, JD/MPH (p. 290)
- Pharmacy and Public Health, PharmD/MPH (p. 251)
- Physician Assistant Studies and Master in Public Health, MS/MPH (p. 252)
- Public Health and Exercise Science with a concentration in Physical Activity and Public Health, MPH/MS (p. 253)
- Public Health and Health Informatics, MPH/MS (p. 254)

Graduate Certificate

- Exercise Science for Clinicians (p. 254)

Population Health, PhD

Beth E. Molnar, ScD, SM

Director of the Population Health Program

This program seeks to train students to become public health researchers and leaders through simultaneous examination of multiple determinations of health, including social, environmental, nutritional, and behavioral risk factors. Our students investigate the underlying causes of adverse health, including disease, disparities, and disability, through training in core population health disciplines—biostatistics, epidemiology, and health services—together with individual-specific and specialized training in topics related to student research. Importantly, our students are mentored by Northeastern's distinguished faculty, who individually and together conduct innovative, solution-focused research in critical population health topics.

Our population health doctoral students have an opportunity to learn to conduct research that addresses five key health determinants:

1. Social and community contexts
2. Environment and neighborhoods
3. Health and healthcare delivery
4. Education
5. Economic stability

Our diverse faculty has expertise in numerous population health disciplines, including health services research, health disparities, environmental and social epidemiology, biostatistics, exercise science, medical sociology, public policy, personal health technologies, and mental

health. Students have the opportunity to work side by side with faculty in conducting cutting-edge, transdisciplinary research in these fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Health Services		
PHTH 5232 or PHTH 5234	Evaluating Healthcare Quality Economic Perspectives on Health Policy	3
Population Health		
PHTH 6400	Principles of Population Health 1	3
PHTH 6410	Principles of Population Health 2	3
Epidemiology		
PHTH 5202	Introduction to Epidemiology	3
PHTH 6202	Intermediate Epidemiology	3
Research Ethics		
BIOL 6381 or PHSC 6212	Ethics in Biological Research Research Skills and Ethics	2
Research and Analysis		
PHTH 5210	Biostatistics in Public Health	3
PHTH 6210	Applied Regression Analysis	3

Options

Complete one of the following options:

SOCIAL AND ENVIRONMENTAL DETERMINANTS OF HEALTH OPTION

Code	Title	Hours
PHTH 5224	Social Epidemiology	3
PHTH 6440	Advanced Methods in Biostatistics	3
PHTH 6800	Causal Inference in Public Health Research	3
Electives		2-4

HEALTH SERVICES AND POLICY OPTION

Code	Title	Hours
ECON 5110	Microeconomic Theory	4
PHTH 5234	Economic Perspectives on Health Policy	3
Electives		2-4

Electives

Code	Title	Hours
CS 6220	Data Mining Techniques	
CS 7280	Special Topics in Database Management	
ECON 5110	Microeconomic Theory	
ECON 5140	Applied Econometrics	
ECON 7200	Topics in Applied Economics	

EXSC 5200	Cardiopulmonary Physiology
EXSC 5220	Advanced Exercise Physiology
EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease
HINF 5200	Theoretical Foundations in Personal Health Informatics
HRMG 6220	Health Organization Management
PHSC 6216	Human Physiology and Pathophysiology
PHTH 5212	Public Health Administration and Policy
PHTH 5214	Environmental Health
PHTH 5226	Strategic Management and Leadership in Healthcare
PHTH 5228	Advances in Measuring Behavior
PHTH 5230	Global Health
PHTH 5440	Community-Based Participatory Research: Environmental Health
PHTH 5540	Health Education and Program Planning
PHTH 6200	Principles and History of Urban Health
PHTH 6204	Society, Behavior, and Health
PHTH 6208	Urban Community Health Assessment
PHTH 6320	Qualitative Methods in Health and Illness
PPUA 7247	Seminar in U.S. Health Policy and Management
SOCL 7257	Contemporary Issues in Sociology
SOCL 7287	Social Movements in Health
STRT 6220	Strategic Management for Healthcare Organizations

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
PHTH 9990	Dissertation	

Program Credit/GPA Requirements

33 total semester hours required
Minimum 3.000 GPA required

Public Health, MPH

Website (<http://www.northeastern.edu/mph>)

Neil Maniar, PhD, MPH

Program Director

316 Robinson Hall
617.373.5925

Through innovation in experiential education, research, and service, the Master of Public Health Program in Urban Health at Northeastern University trains diverse and skilled professionals who promote and protect the health of urban communities.

In order to help prepare the next generation of urban public health leaders and professionals, the MPH offers our diverse graduate students an opportunity to:

- Complete your degree 100 percent online, on-ground, or in a hybrid format (combination of both)
- Participate in learning options that meet the needs of the working professional:
 - On-ground courses are offered in the evening (most classes meet once a week from 5:00 to 7:30 p.m.)
 - Enroll as either a full-time or part-time student
- Take elective courses on a wide range of public health topics, including cross-departmental offerings from Northeastern’s other colleges (law, business, social sciences, and more)
- Enjoy a supportive learning environment that includes outstanding student mentoring

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in each required course.

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
or PPUA 6509	Techniques of Program Evaluation	
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3
Electives		
Code	Title	Hours
Complete 9 semester hours from the following. In consultation with your faculty advisor, you may complete electives from another discipline:		9
PHTH 5222	Health Advocacy	
PHTH 5224	Social Epidemiology	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5228	Advances in Measuring Behavior	
PHTH 5230	Global Health	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	
PHTH 5236	Public Health Nutrition	
PHTH 5300	Project Management in Public Health	
PHTH 5310	Budget Principles in Public Health	

PHTH 5320	Grant Writing in Public Health
PHTH 5440	Community-Based Participatory Research: Environmental Health
PHTH 5540	Health Education and Program Planning
PHTH 6202	Intermediate Epidemiology
PHTH 6210	Applied Regression Analysis
PHTH 6320	Qualitative Methods in Health and Illness
PHTH 6400	Principles of Population Health 1
PHTH 6410	Principles of Population Health 2
PHTH 6440	Advanced Methods in Biostatistics
PHTH 6460	Analysis of Messy Data
PHTH 6800	Causal Inference in Public Health Research
PPUA 6509	Techniques of Program Evaluation

Program Credit/GPA Requirements

42 total semester hours required
 Minimum 3.000 GPA required

Exercise Science with Concentration in Physical Activity and Public Health, MS

Rui Li, PhD
 Program Director

520 Behrakis Health Sciences Center
 617.373.2526

The Department of Health Sciences currently offers a Master of Science in Exercise Science with a public health emphasis. The concentration in physical activity and public health recognizes that inactivity is a major public health problem and represents a significant risk factor for many chronic diseases, including heart disease, stroke, hypertension, metabolic syndrome, obesity, type 2 diabetes, and some types of cancer. Moreover, this concentration integrates key competencies for a degree in exercise science recommended by the American College of Sports Medicine (ACSM), including knowledge of exercise physiology and the assessment and development of physical activity and exercise programs for the general and clinical populations. Graduate students seeking this degree are members of the Bouvé College of Health Sciences—a leading national model for education and research in the health, psychosocial, and biomedical sciences, which supports the university’s mission of educating students for a life of fulfillment and accomplishment and creating and translating knowledge to meet global and societal needs through interdisciplinary research, urban engagement, experiential learning, and the integration of classroom learning with real-world experience. Faculty in the department are exploring a range of research topics, including acute/chronic effects of exercise, community-based exercise and nutrition interventions, nutrition epidemiology, health disparities, urban public health, and application of technology for measuring and motivating behavior change.

Two unique features of the program are:

- The program offers three pathways of study based on student interests: research, public health, and practice-based pathways. Students take two electives to enhance their knowledge in their selected pathway. These pathways are designed to train students to pursue a terminal degree in exercise science/opportunities in a

research setting, federal/private/nonprofit institutions, and clinical setting.

- We offer students internship, practicum, and research opportunities at both on- and off-campus sites. Experiential education is a key component of the program because application of classroom knowledge provides valuable preparation for a career in exercise science.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Exercise Science		
EXSC 5200	Cardiopulmonary Physiology	3
EXSC 5210	Physical Activity and Exercise: Prescription, Measurement, and Testing	3
EXSC 5220	Advanced Exercise Physiology	3
EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease	3
EXSC 6202	Electrocardiography, Clinical Assessment, and Prescription	3
Public Health		
PHTH 5540	Health Education and Program Planning	3
PHTH 6208	Urban Community Health Assessment	3
Research		
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
EXSC 6400	Applied Research Methods	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following: ¹		6
HSCI 5230	Clinical Nutrition Applications in Health and Disease	
EXSC 5000 to EXSC 6402		
PHTH 5000 to PHTH 6800		

Program Credit/GPA Requirement

36 total semester hours required

Minimum 3.000 GPA required

¹ Students may choose two courses within one of three areas (public health, practice-based, and research-based) to deepen their knowledge and competency within that area.

Health Data Analytics, MS

The digitization of healthcare systems in clinical settings, in combination with the explosion of personal data collection devices, provides the opportunity of using data for revolutionizing approaches to care at all levels with an emphasis on precision medicine and person-centered care. The ability to take advantage of this "Big Data" opportunity, however, requires expertise at the intersection of health informatics, data science, and computational modeling. The Master of Science

in Health Data Analytics is designed to prepare students to succeed in this emerging field. This program offers a strong, competency-based curriculum that addresses data analytics ranging from data acquisition from traditional and emerging data streams, data aggregation methods, data mining algorithms, predictive computational modeling, and visualization techniques. Students can expect to amass a broad and deep understanding of the various methods, software tools, and topical expertise needed to discover meaningful patterns in health-related data and effectively communicate their implications to a number of diverse stakeholders. Successful graduates of the Master of Science in Health Data Analytics will be effective practitioners and leaders in the rapidly developing domain of data analytics with a focus on health and healthcare.

The interdisciplinary Master of Science in Health Data Analytics consists of 12 courses, drawn from the College of Computer and Information Science and the Bouvé College of Health Science; a capstone project; and an ongoing series of seminars on topics in health data analytics. Two tracks will be available to matriculating students: standard and research based.

LEARNING OUTCOMES

- Proficiency in the health and healthcare ecosystem, including stakeholder roles such as payers, providers, and government; social determinants of health; wellness promotion; acute vs. chronic care
- Ability to acquire, store, and validate data; familiarity with common health-related data sources and formats
- Proficiency in analyzing data using statistical, epidemiological, and data-mining methods along with appropriate software tools and programming languages
- Ability to interpret and present analytical results to nontechnical stakeholders using visualization and accessible narrative structures

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Analytics/Modeling/Statistics		
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
HINF 6400	Introduction to Health Data Analytics	3
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
Healthcare		
HINF 5102	Data Management in Healthcare	3
HINF 5105	The American Healthcare System	3
HINF Predictive Analy (TBA)		3

¹ Please see college administrator for course information.

Thesis/Capstone

Code	Title	Hours
Complete either Thesis or Capstone:		3
<i>Thesis</i>		
HINF Health Informatics (TBA)	Thesis	

Capstone		
HINF 7701	Health Informatics Capstone Project	

Electives

At least one course must be chosen from the methods list.

Code	Title	Hours
Methods		
Complete 3–6 semester hours from the following:		3-6
PHTH 6202	Intermediate Epidemiology	
PHTH 6210	Applied Regression Analysis	
PHTH 6440	Advanced Methods in Biostatistics	
CS 6350	Empirical Research Methods	
CAEP 7712	Intermediate Statistical Data Analysis Techniques	
CAEP 7716	Advanced Research and Data Analyses 2	

Other Electives		
Complete 0–4 semester hours from the following:		0-4
ARTG 5330	Visualization Technologies 1	
ARTG 6320	Design of Information-Rich Environments	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 6215	Project Management	
HINF 6220	Database Design, Access, Modeling, and Security	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	

Program Credit/GPA Requirements

37 total semester hours required
 Minimum 3.000 GPA required

Health Informatics, MS

See Bouvé College of Health Sciences interdisciplinary programs (p. 112) for curriculum information.

Pharmacy and Public Health, PharmD/MPH

The School of Pharmacy and the Department of Health Sciences offer a combined Doctor of Pharmacy (PharmD) and Master in Public Health (MPH) program.

The combined PharmD/MPH program recognizes and reinforces the importance of public health in pharmacy practice. Central to addressing urban public health concerns, and in particular those associated with racial and ethnic health disparities, the program is committed to building a strong, diverse, and activist public health workforce. The goal of the program is to graduate professionals who are well educated in the complex issues associated with disparate health status and healthcare access. The combined PharmD/MPH program allows qualified and interested students an opportunity to achieve their goal of obtaining a

more robust understanding of public health through an MPH degree while also completing their PharmD.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

DOCTOR OF PHARMACY REQUIREMENTS

Code	Title	Hours
Required Core		
PHMD 2350	Healthcare Systems	3
PHMD 5223	Evidence-Based Medicine	2
PHMD 5250	Pharmacy Care Management	3
PHMD 5330	Jurisprudence	3
Pharmaceutics		
PHSC 2330	Immunology	3
PHSC 3411	Pharmaceutics 1	4
PHSC 3412	Pharmaceutics 2	4
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3
PHSC 5360	Anti-Infectives	4
Pharmacology/Medicinal Chemistry		
PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5
Disease Management		
PHMD 4611	Comprehensive Disease Management 1	6
PHMD 4612	Comprehensive Disease Management 1 Seminar	1
PHMD 4621	Comprehensive Disease Management 2	6
PHMD 4622	Comprehensive Disease Management 2 Seminar	1
PHMD 4623	Comprehensive Disease Management 2 Skills Lab	0.5
PHMD 4631	Comprehensive Disease Management 3	6
PHMD 4632	Comprehensive Disease Management 3 Seminar	1
PHMD 4633	Comprehensive Disease Management 3 Skills Lab	0.5
PHMD 4641	Comprehensive Disease Management 4	6
PHMD 4642	Comprehensive Disease Management 4 Seminar	1
PHMD 4643	Comprehensive Disease Management 4 Skills Lab	0.5
Practice		
PHMD 1201	Introduction to Pharmacy Practice	2.5
PHMD 1202	Lab for PHMD 1201	0.5
PHMD 2310	Educational and Behavioral Interventions in Pharmacy Practice	2
PHMD 2311	Lab for PHMD 2310	0.5
PHMD 5270	Economic Evaluation of Pharmaceuticals and Pharmacy Practice	2
PHMD 5450	Advanced Pharmacy Practice Experience Preparatory Seminar	1

Required Practice Experience

Complete 36 semester hours of required practice experience:	36
PHMD 6440-PHMD 6474	

MASTER OF PUBLIC HEALTH REQUIREMENTS

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3
Electives		
Complete 9 semester hours in the following subject area:	9	
PHTH or approved electives in other subject areas		

Program Credit/GPA Requirements

156 total semester hours required
Minimum 3.000 GPA required

Physician Assistant Studies and Public Health, MS/MPH

The Northeastern University Physician Assistant (PA) program and Department of Health Sciences offer a combined Master of Science in Physician Assistant Studies (MS)/Master in Public Health Program (MPH) program. The combined PA/MPH program allows qualified and interested students an opportunity to achieve their goal of obtaining a more robust understanding of public health through an MPH degree while also completing their Master of Science in Physician Assistant Studies.

Since its inception in 2008, the Northeastern MPH program has distinguished itself from other MPH programs in the area through its unique focus on urban public health. The program's overarching goal is to address urban public health concerns, particularly those associated with racial and ethnic health disparities, in order to build a diverse and activist-oriented public health workforce. The MPH program has a strong commitment to providing a flexible course of study for working professionals. This flexibility allows for easy incorporation into a dual-degree program.

The combined degree that incorporates both programs is designed to help diversify the public health workforce and improve graduates' ability to approach clinical situations with cultural sensitivity and awareness. Successful graduates of the program benefit from having a greater understanding of public health issues in clinical practice, including the racial and ethnic health disparities prevalent in the U.S. healthcare system, as well as a strong grounding in epidemiology, quantitative and qualitative research methods, and the use of scientific evidence, skills critical to many fields of healthcare practice.

This dual degree takes a total of three years to complete (as opposed to four, if each degree were pursued separately), and a total number of 12 credits are shared between both degrees.

For more information, including the application and admissions process, please visit the PA/MPH website here (<https://bouve.northeastern.edu/health-sciences/programs/pa-mph>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Physician Assistant Requirements

A grade of C or higher is required in each course.

Code	Title	Hours
Required Core		
PA 6208	Professional Issues for Physician Assistants	2
PA 6326	Aspects of Primary Care	4
PA 6327	Emergency Medicine and Critical Care	2
PA 6328	Aging and Rehabilitation Medicine	2
Anatomy & Physiology		
PA 6200	Anatomy and Physiology 1	3
PA 6201	Anatomy and Physiology 2	3
Diagnosis & Evaluation		
PA 6203	Physical Diagnosis and Patient Evaluation 1	3
PA 6204	Physical Diagnosis and Patient Evaluation 2	3
PA 6207	Clinical Laboratory and Diagnostic Methods	4
PA 6323	Clinical Neurology	2
Pharmacology		
PA 6205	Pharmacology 1	2
PA 6206	Pharmacology 2	2
Principles		
PA 6311	Principles of Medicine 1	4
PA 6312	Principles of Medicine 2	4
PA 6313	Principles of Medicine 3	4
PA 6320	Principles of Obstetrics and Gynecology	2
PA 6321	Principles of Surgery	2
PA 6322	Principles of Orthopedics	2
PA 6324	Principles of Pediatrics	2
PA 6325	Principles of Psychiatry	2
Clinical		
PA 6400	Applied Study in Medicine	5
PA 6401	Applied Study in Ambulatory Medicine	5
PA 6402	Applied Study in Family Practice	5
PA 6403	Applied Study in Emergency Medicine	5
PA 6404	Applied Study in Obstetrics and Gynecology	5
PA 6405	Applied Study in Pediatrics	5
PA 6406	Applied Study in Surgery	5
PA 6407	Applied Study in Mental Health	5

Master's of Public Health Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5232	Evaluating Healthcare Quality	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3
Elective		
Complete 3 semester hours of approved elective course work.		3

Program Credit/GPA Requirements

133 total semester hours required

Minimum 3.000 GPA required

Public Health and Exercise Science with a concentration in Physical Activity and Public Health, MPH/MS

Website (<https://bouve.northeastern.edu/health-sciences/programs/ms-exercise-science-mph>)

Rui Li, PhD

Director of Exercise Science Program

520 Behrakis Health Sciences Center

617.373.2526

Neil Maniar, PhD, MPH

Director of Master of Public Health Program

316 Robinson Hall

617.373.5925

The Department of Health Sciences at Northeastern University offers a combined Master in Public Health program (MPH)/Master of Science in Exercise Science (EXSC) program. This dual-degree program allows qualified students to achieve their goal of obtaining a more robust understanding of public health through an MPH degree while also completing their master's in exercise science. Course work consists of advanced physiology such as musculoskeletal and cardiopulmonary systems and the assessment and prescription of exercise and physical activity in the context of the social determinants of health. Graduates of the program will benefit from having a greater understanding of public health issues in the fields of exercise and physical activity in order to better design exercise prescription programs in the healthcare industry that aim to improve the health of individuals and communities.

Program Requirements

Public Health Requirements

A grade of B– or higher is required in all course work.

Code	Title	Hours
Public Health		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3

Exercise Science Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Physiology		
EXSC 5200	Cardiopulmonary Physiology	3
EXSC 5220	Advanced Exercise Physiology	3
EXSC 5230	Physical Activity and Exercise: Effects on Musculoskeletal Health and Disease	3
Assessment & Prescription		
EXSC 5210	Physical Activity and Exercise: Prescription, Measurement, and Testing	3
EXSC 6202	Electrocardiography, Clinical Assessment, and Prescription	3
Research		
EXSC 6400	Applied Research Methods	3

Elective

Code	Title	Hours
Complete one of the following:		
HSCI 5230	Clinical Nutrition Applications in Health and Disease	3
PHTH 5230	Global Health	3
PHTH 6320	Qualitative Methods in Health and Illness	3
PHTH 6350	Social Survey Research Methods	3
HINF 6240	Improving the Patient Experience through Informatics	3

Program Credit/GPA Requirement

54 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer 1	Hours
EXSC 5210	3	EXSC 5220	3	PHTH 5540	3-4
PHTH 5210	3	EXSC 6202	3	PHTH 6208	3
PHTH 5212	3	PHTH 5120	3		
PHTH 6204	3	PHTH 5202	3		
	12		12		6-7
Year 2					
Fall	Hours	Spring	Hours		
EXSC 5200	3	EXSC 6400	3		
EXSC 5230	3	PHTH 5214	3		
PHTH 6200	3	PHTH 6910	3		
PHTH 6966	3	Approved MPH or EXSC elective	3		
	12		12		

Total Hours: 54-55

Public Health and Health Informatics, MPH/MS

The Master of Public Health (MPH) and Master of Science in Health Informatics (MSHI) combined program allows qualified and interested students to prepare to lead healthcare at the nexus between public health and health informatics. Graduates of this program will be well-educated in the complex issues associated with improvements in information technology, as well as changes to the public health and healthcare delivery systems. Recognizing the increasing overlap between health informatics and public health with a focus on urban health, this program incorporates course work from both the MPH and MSHI curricula for both degrees, reducing tuition costs and saving one year of study compared to obtaining both degrees individually.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A grade of B- or higher is required in each course.

Public Health Requirements

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
or PPUA 6509	Techniques of Program Evaluation	
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3

Health Informatics Requirements

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 6220	Database Design, Access, Modeling, and Security	3
HINF 6240	Improving the Patient Experience through Informatics	3
HINF 6355	Key Standards in Health Informatics Systems	3
HINF 6405	Quantifying the Value of Informatics	3

Capstone and Practicum

Code	Title	Hours
PHTH 6910	Public Health Capstone	3
PHTH 6966	Practicum	3

Electives

Code	Title	Hours
Complete three of the following, with at least one course completed from each group:		9

Group 1

HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	

Group 2

PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
HINF 6404	Patient Engagement Informatics and Analytics	

Program Credit/GPA Requirements

57 total semester hours required
Minimum 3.000 GPA required

Exercise Science for Clinicians, Graduate Certificate

The Department of Health Sciences offers a Graduate Certificate of Exercise Science for Clinicians. Exercise training has been shown to be of therapeutic benefit to patients who have chronic diseases, including but not limited to cardiovascular disease, pulmonary disease, and metabolic disorders. Supervised exercises are commonly performed in a variety of settings including hospitals, outpatient clinics, physician's offices, university laboratories, or hospital-based research facilities. Exercise physiologists work in the above settings to create, implement, and evaluate exercise programs. Clinicians, such as physicians and nurses, work with exercise physiologists to prescribe individualized exercise to meet the specific clinical needs of their patients. Understanding the benefits of exercise, and how exercise plays a role in health promotion and disease prevention/intervention, is only a small part of traditional training of physicians and nurses. This Graduate Certificate of Exercise Science for Clinicians will help bridge the knowledge gap between the medical field and the exercise field. Additionally, it will help clinicians understand the role of exercise as a proven powerful medicine and a readily available therapy that has

demonstrated a high therapeutic effect in a number of chronic disease states with little to no side effects.

Two important features:

- The curriculum includes course work and experiential learning opportunities for students to develop well-rounded knowledge of the role of physical activity and exercise on health and disease prevention/intervention. It covers knowledge of exercise physiology and exercise testing, assessment, and prescription, all of which are major domains of job tasks for a clinical exercise physiologist required by the American College of Sports Medicine (ACSM).
- Upon successful completion of the curriculum, students will be granted an exercise science for clinicians certificate. Students may also choose to take additional courses and fulfill the program requirements to complete a Master of Science in Exercise Science, which will prepare them for ACSM certification to become a certified clinical exercise physiologist.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Advanced Physiology		
EXSC 5200	Cardiopulmonary Physiology	3
EXSC 5220	Advanced Exercise Physiology	3
Assessment and Prescription		
EXSC 5210	Physical Activity and Exercise: Prescription, Measurement, and Testing	3
EXSC 6202	Electrocardiography, Clinical Assessment, and Prescription	3
Internship		
Complete the following (repeatable) course twice:		6
EXSC 6300	Internship in Exercise Science	

Elective

Code	Title	Hours
Complete 3 semester hours of electives with approval of program director.		3

Program Credit/GPA Requirements

21 total semester hours required
 Minimum 3.000 GPA required

Health Informatics Management and Exchange Graduate Certificate

See Bouvé College of Health Sciences interdisciplinary programs (p. 294), for curriculum information.

Health Informatics Privacy and Security, Graduate Certificate

See Bouvé College of Health Sciences interdisciplinary programs (p. 294) for curriculum information.

Health Informatics Software Engineering Graduate Certificate

See Bouvé College of Health Sciences interdisciplinary programs (p. 294) for curriculum information.

School of Nursing

Website (<http://www.northeastern.edu/bouve/nursing>)

Rhonda M. Board, PhD, RN, CCRN

Interim Dean and Associate Professor, School of Nursing
 Associate Dean, Bouvé College of Health Sciences

Janet Rico, MBA, NP-BC, PhD

Associate Clinical Professor and Assistant Dean of Graduate Nursing Programs

211 Robinson Hall
 617.373.3521
 617.373.2985 (fax)

Susan McDonald, Administrative Coordinator, Academic Programs,
s.mcdonald@northeastern.edu

This is an exciting time in healthcare and nursing in particular. According to a recent Gallup Poll, the public ranks nursing as the “most ethical” profession. In contemporary models of healthcare, nurses are considered the critical backbone and life force of the delivery system. What does that mean for those considering nursing as a profession? It means that as a nurse you will carry an awesome responsibility—to improve the health outcomes of patients and their families. It also means that you must be among the best prepared of health professionals. Excellent preparation is just what we seek to offer.

If you are coming to the School of Nursing to earn a master’s, PhD, or DNP, your learning will be guided by our senior faculty, nursing leaders who are expert advance practice nurses in their respective specialty areas. Our affiliation with over 100 institutions means that you and the faculty can select the best place for your clinical rotations.

You want to change career pathways? We have the Certificate of Advanced Graduate Study (CAGS) that facilitates attainment of a specialty track if you already have an advanced nursing degree. You want research? We have excellent nurse researchers who are working to improve patient care and advance nursing knowledge. Come join nursing at its finest. Northeastern University is a school on the move.

Further information about the specializations can be found under the program name.

Admission Requirement

Admissions requirements (<http://www.northeastern.edu/bouve/grad/chart.html>) are specific to the program.

Programs

Doctor of Philosophy (PhD)

- Nursing (Post-BSN) (p. 256)
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Doctor of Nursing Practice (DNP)

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Certificate of Advanced Graduate Study (CAGS)

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- Pediatric Nurse Practitioner, Acute and Primary Care (p. 261)
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Master of Science (MS)

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Dual Degree

- Nursing and Business Administration, MS/MBA (p. 267)

Graduate Certificate

- Nursing Informatics (p. 267)

Nursing, PhD (Post-BSN)

Overview

Research

The (post-BSN) PhD program in nursing prepares research scientists, educators, and leaders who seek to improve health and healthcare across the life span with an emphasis on urban, vulnerable, and underserved populations. Graduates are expected to lead research initiatives that advance nursing science through knowledge development and interdisciplinary scholarly inquiry.

Students will study with nursing faculty whose research addresses questions that extend across a broad health spectrum, including health promotion, risk prevention, and self-management of chronic conditions. Collectively, the faculty have a variety of expertise and interests, such as health issues of women, children, and families; HIV; cancer; mental health; depression; and substance use.

In addition, students will have an opportunity to study with faculty from other Northeastern departments as well as with other Boston-area researchers. This collaboration allows students to work across disciplines and to access populations and sites essential for completing a dissertation. Visit the Northeastern University Faculty Research site (<http://www.northeastern.edu/research/faculty-research>) for more information.

Program Requirements

Bachelor's Degree Entrance

A bachelor's degree in nursing is preferred. Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual reviews
Comprehensive examination
Dissertation proposal
Dissertation defense

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Required Core		
NRS 7104	Foundations in Nursing Research	3
NRS 7700	The Science of Nursing	3
NRS 7705	Theoretical and Conceptual Foundations in Nursing Science	3
NRS 7715	Measurement in Clinical Research	3
NRS 7750	Healthcare of Urban Populations	3
Statistics		
PH 5210	Biostatistics in Public Health	3
NRS 5121	Epidemiology and Population Health	3
PH 6210	Applied Regression Analysis	3
Research		
NRS 7709	Qualitative Research Methods	3
NRS 7712	Quantitative Research Methods	3
NRS 7755	Intervention Research: Development, Implementation, and Evaluation	3
NRS 7770	Research Colloquium	1
Complete the following (repeatable) course twice:		
NRS 9984	Research	6
Cognate Courses ¹		
Complete two cognate courses in consultation with your faculty advisor.		6
Electives		
Complete two elective courses in consultation with your faculty advisor.		6
Dissertation		
Code	Title	Hours
NRS 9845	Dissertation Seminar 1	3
NRS 9846	Dissertation Seminar 2	3
Complete the following (repeatable) course twice:		
NRS 9990	Dissertation	2

Program Credit/GPA Requirements

60 total semester hours required
Minimum 3.000 GPA required

¹ Cognates are graduate-level courses that are taken outside of nursing. These courses should provide depth and breadth to the student's dissertation research.

² Electives may be taken in nursing or in an area related to the student's dissertation research, including appropriate methodology and statistics courses.

Nursing, PhD—Advanced Entry (Post-MSN)

The advanced entry (Post-MSN) PhD program in nursing prepares research scientists, educators, and leaders who seek to improve health and healthcare across the life span with an emphasis on urban, vulnerable, and underserved populations. Graduates are expected to lead research initiatives that advance nursing science through knowledge development and interdisciplinary scholarly inquiry.

Students will study with nursing faculty whose research addresses questions that extend across a broad health spectrum, including health promotion, risk prevention, and self-management of chronic conditions. Collectively, the faculty have a variety of expertise and interests, such as health issues of women, children, and families; HIV; cancer; mental health; depression; and substance use.

In addition, students will have an opportunity to study with faculty from other Northeastern departments, as well as with other Boston-area researchers. This collaboration allows students to work across disciplines and to access populations and sites essential for completing a dissertation. Visit the Northeastern University Faculty Research site (<http://www.northeastern.edu/research/faculty-research>) for more information.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual reviews
Comprehensive examination
Dissertation proposal
Dissertation defense

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Required Core		
NRSG 7700	The Science of Nursing	3
NRSG 7705	Theoretical and Conceptual Foundations in Nursing Science	3
NRSG 7750	Healthcare of Urban Populations	3
Statistics		
PHTH 5210	Biostatistics in Public Health	3
PHTH 6210	Applied Regression Analysis	3
Cognate Courses ¹		
Complete two cognate courses in consultation with your faculty advisor.		6
Research		
NRSG 7709	Qualitative Research Methods	3
NRSG 7712	Quantitative Research Methods	3
NRSG 7715	Measurement in Clinical Research	3
NRSG 7755	Intervention Research: Development, Implementation, and Evaluation	3
NRSG 7770	Research Colloquium	1

Complete the following (repeatable) course twice:		6
NRSG 9984	Research	

Dissertation Courses

Code	Title	Hours
NRSG 9845	Dissertation Seminar 1	3
NRSG 9846	Dissertation Seminar 2	3
Complete the following (repeatable) course twice:		2
NRSG 9990	Dissertation	

Program Credit/GPA Requirements

48 total semester hours required
Minimum 3.000 GPA required

¹ Cognates are graduate-level courses that are taken outside of nursing and should provide depth and breadth to the student's area of interest.

Nursing Practice, DNP (Post-Master's)

The Doctor of Nursing Practice (DNP) is a practice-oriented degree designed to prepare advanced nurses at the highest level of scholarly practice. Keeping pace with the demands of today's changing healthcare environment requires clinical experts who have the knowledge and skills to be effective change agents. Graduates of our post-master's DNP program assume clinical and leadership positions as advanced nurses in a variety of roles including clinical experts, nurse executives, community leaders, and professional organization leaders.

The Northeastern University post-master's DNP program includes advanced course work in leadership, practice inquiry, population health, informatics, and health policy. Our goal is to prepare the next generation of nurse leaders with a greater breadth of expertise so they can collaborate more effectively with interprofessional partners and provide leadership to enhance quality and safety. The DNP program curriculum is delivered online in an executive model hybrid format.

If you are a registered nurse with at least two years of active advanced nursing experience, you may enter the DNP program after completing a master's degree in nursing or, in some cases, a related health field. A DNP Scholarly Project and 1,000 scholarly practice hours are required for program completion. A gap analysis upon admission will determine how many, if any, practice hours from a previously completed Master of Science in Nursing practicum qualify toward this practice hour requirement. An ePortfolio is used to document all scholarly practice hours and DNP program achievements.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 6300	Healthcare Finance and Marketing	3
NRSG 6306	Health Informatics	3
NRSG 7100	Leadership in Advanced Practice Nursing	3
NRSG 7924	Applied Epidemiology for Advanced Nursing	3

NRSG 7925	Health Policy and Advocacy	3
Project		
NRSG 7920	The Steps to Practice Inquiry: Analyze, Evaluate, Synthesize, and Apply the Evidence	3
NRSG 7921	DNP Scholarly Project 1: Design and Ethical Consideration of Practice Application	3
NRSG 7922	DNP Scholarly Project 2: Applying Practice Knowledge—Implementation/Outcomes	3
NRSG 7923	DNP Scholarly Project 3: Dissemination of Practice Inquiry	3

Elective

Code	Title	Hours
Complete 3 semester hours, selected in consultation with faculty program advisor.		3

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Nursing Practice with Concentration in Nurse Anesthesia, DNP

The Doctor of Nursing Practice with Concentration in Nurse Anesthesia is a practice-oriented degree designed to prepare nurse anesthetists at the highest level of clinical scholarly practice. Keeping pace with the demands of today's changing healthcare environment requires clinical experts who have the knowledge and skills to be effective change agents. The program prepares graduates to question practice, search for and critically appraise the best evidence to guide practice, and implement and evaluate the application of best evidence in practice.

A successful graduate from the program will gain the requisite skill set and leadership expertise to be a critical member of the healthcare team and provide anesthetics to patients throughout the life cycle in diverse settings such as small local hospitals, regional centers, and rural or urban settings for all types of surgery or procedures.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A grade of B or higher is required in all course work.

Core Requirements

Code	Title	Hours
Required Core		
NRSG 5117	Advanced Pharmacology	2
NRSG 5121	Epidemiology and Population Health	3
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
NRSG 6300	Healthcare Finance and Marketing	3
NRSG 6302	Health Policy and Law	3
NRSG 6306	Health Informatics	3
NRSG 7100	Leadership in Advanced Practice Nursing	3

Didactic

NRSG 7500	Role/Practice Issues in Nurse Anesthesia	3
NRSG 7503	Pharmacotherapeutics in Anesthesia and Critical Care Nursing	3
NRSG 7506	Applied Chemistry, Physics, and Cardiopulmonary Physiology of Anesthesia	3
NRSG 7509	Advanced Concepts in Nurse Anesthesia Practice	3
NRSG 7511	Applied Gross Anatomy and Physiology of Anesthesia	3
NRSG 7520	Conceptual Basis of Nurse Anesthesia Practice 1	3
NRSG 7523	Conceptual Basis of Nurse Anesthesia Practice 2	3
NRSG 7526	Conceptual Basis of Nurse Anesthesia Practice 3	3
Practicum		
NRSG 7530	Nurse Anesthesia Practicum 1	2
NRSG 7533	Nurse Anesthesia Practicum 2	4
NRSG 7536	Nurse Anesthesia Practicum 3	4
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7920	The Steps to Practice Inquiry: Analyze, Evaluate, Synthesize, and Apply the Evidence	3
Project		
NRSG 7921	DNP Scholarly Project 1: Design and Ethical Consideration of Practice Application	3
NRSG 7922	DNP Scholarly Project 2: Applying Practice Knowledge—Implementation/Outcomes	3
NRSG 7923	DNP Scholarly Project 3: Dissemination of Practice Inquiry	3
Clinical		
NRSG 7540	Advanced Clinical Experiences in Nurse Anesthesia 1	1
NRSG 7543	Advanced Clinical Experiences in Nurse Anesthesia 2	1
NRSG 7546	Advanced Clinical Experiences in Nurse Anesthesia 3	2

Program Credit/GPA Requirements

77 total semester hours required
Minimum 3.000 GPA required

Nursing—Adult-Gerontology Nurse Practitioner, Acute Care, CAGS

The adult-gerontology acute-care nurse practitioner program is designed to prepare nurses for advanced-practice roles as clinical experts, managers, educators, and consultants. The program offers advanced study with a major focus on clinical experience and culminates with the Master of Science with a specialization in Nursing. Students may pursue either full-time or part-time study. Nurses who possess a Master

of Science are eligible for the Certificate of Advanced Graduate Study (CAGS) in this specialization.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Theory		
NRSG 6220	Nursing Management: Acute Episodic Illness	3
NRSG 6221	Nursing Management: Critical and Chronic Illness	3
NRSG 6241	Acute-Care Concepts in Nursing Practice	3
Practicum		
NRSG 6420	Adult-Gerontology Acute-Care Nursing Practicum 1	2
NRSG 6421	Adult-Gerontology Acute-Care Nursing Practicum 2	4
NRSG 6422	Adult-Gerontology Acute-Care Nursing Practicum 3	4

Electives

Code	Title	Hours
Complete 5 semester hours in the following subject area:		5
NRSG		

Program Credit/GPA Requirements

24 total semester hours required
Minimum 3.000 GPA required

Nursing—Adult-Gerontology Nurse Practitioner, Primary Care, CAGS

This specialization offers nurse practitioners (NPs) with certification in a different specialty the opportunity to prepare for practice providing high-quality adult primary care services as an adult-gerontology nurse practitioner. Adult-gerontology NPs provide services to individuals across most of the life span in clinics, private practices, home care, long-term care, and day programs. Upon completion of the primary care program, graduates are eligible to sit for the adult-gerontology certification exam.

Program Requirements

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 6249	Health Promotion of Adult/Older Adult	3
NRSG 6253	Primary Care of Adult/Older Adult Health Problems	4
NRSG 6254	Primary Care of Adult/Older Adult Complex Patients	4
Clinical		
NRSG 5117	Advanced Pharmacology	2

NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
NRSG 6222	Pharmacology of Adults and Older Adults	2
Practicum		
NRSG 6449	Health Promotion of Adult/Older Adult Practicum	1
NRSG 6450	Adult/Older Adult Practicum 1	4
NRSG 6451	Adult/Older Adult Practicum 2	4

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Nursing—Family Psychiatric Nurse Practitioner, CAGS

We offer specialized and flexible program options in psychiatric mental health nursing for nurse practitioners (NPs) with certification in another specialty. Classes are offered during the late afternoon and early evening hours to accommodate the multiple responsibilities of adult learners. This is a 24-semester-hour program of study. Upon completion of the psychiatric mental health advanced practice Certificate of Advanced Graduate Study (CAGS) program, graduates are eligible to sit for available national certification exams in their area of practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 6281	Dimensions of Clinical Practice	3
NRSG 6282	Clinical Psychopharmacology	3
NRSG 6283	Psychobiological Bases of Mental Disorders	3
NRSG 6286	Contemporary Psychotherapies—Theory and Practice	3
Practicum		
NRSG 6480	Psychiatric Practicum across the Life Span 1	5
NRSG 6481	Psychiatric Practicum across the Life Span 2	5

Elective

Code	Title	Hours
Complete 2 semester hours in the following subject area:		2
NRSG		

Program Credit/GPA Requirements

24 total semester hours required
Minimum 3.000 GPA required

Nursing—Neonatal Nurse Practitioner, CAGS

We offer a certificate of advanced study for experienced nurses who have a master's degree in nursing and want to specialize in neonatal

critical care. Applicants are required to have at least two years of level 3 or greater of neonatal intensive care unit (NICU) experience before entering our program; most applicants have greater amounts of relevant experience. One year of full-time study offers the student an opportunity to increase skills and experience and enable the student to sit for the neonatal nurse practitioner certification exam offered by the National Certification Corporation for the obstetric, gynecologic, and neonatal nursing specialties.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Prerequisites

Code	Title	Hours
NRSNG 5117	Advanced Pharmacology	2
NRSNG 5126	Pathophysiology for Advanced Practice	3

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Clinical		
NRSNG 6116	Advanced Health Assessment of the Neonate and Infant	3
NRSNG 6230	Nursing Management: Critically Ill Neonatal 1	3
NRSNG 6231	Nursing Management: Critically Ill Neonatal 2	3
NRSNG 6232	Neonatal Pharmacology	2
Practicum		
NRSNG 6430	Neonatal Clinical Practicum 1	4
NRSNG 6431	Neonatal Clinical Practicum 2	4
NRSNG 6432	Neonatal Clinical Practicum 3	2

Elective

Code	Title	Hours
Select courses in consultation with faculty advisor.		
NRSNG		3

Program Credit/GPA Requirements

24 total semester hours required

Minimum 3.000 GPA required

Nurse Anesthesia, CAGS

If you have already earned a master's degree and seek further preparation in a specialization to qualify for national certification, the Certificate of Advanced Graduate Study is designed to meet your goal. The program is available in all of the specializations and areas of concentration offered within the nursing master's program: neonatal nurse practitioner; acute-care nurse practitioner; primary care (pediatric, adult, family); psychiatric/mental health (adult, pediatric); nursing administration; and nurse anesthesia.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Prerequisites

A grade of B or higher is required in each course.

Code	Title	Hours
NRSNG 5117	Advanced Pharmacology	2
NRSNG 5126	Pathophysiology for Advanced Practice	3
NRSNG 6115	Health Assessment	3

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Didactic		
NRSNG 6320	Role/Practice Issues in Nurse Anesthesia	3
NRSNG 6321	Conceptual Basis of Nurse Anesthesia Practice 1	3
NRSNG 6322	Conceptual Basis of Nurse Anesthesia Practice 2	3
NRSNG 6324	Chemistry and Physics in Anesthesia	3
NRSNG 6325	Pharmacotherapeutics in Anesthesia and Critical Care Nursing	2
NRSNG 6333	Conceptual Basis of Nurse Anesthesia Practice 3	3
NRSNG 6336	Advanced Concepts in Nurse Anesthesia Practice	3
Practicum		
NRSNG 6530	Nurse Anesthesia Practicum 1	2
NRSNG 6534	Nurse Anesthesia Practicum 2	4
NRSNG 6535	Nurse Anesthesia Practicum 3	4
Clinical Experiences		
NRSNG 6540	Advanced Clinical Experiences in Nurse Anesthesia 1	1
NRSNG 6541	Advanced Clinical Experiences in Nurse Anesthesia 2	1
NRSNG 6542	Advanced Clinical Experiences in Nurse Anesthesia 3	1

Program Credit/GPA Requirements

33 total semester hours required

Minimum 3.000 GPA required

Nursing—Pediatric Nurse Practitioner, Acute Care, CAGS

The pediatric acute-care Certificate of Advanced Graduate Study (CAGS) is available for pediatric or family nurse practitioners who wish to be prepared for practice in the pediatric acute-care role. Applicants must have a minimum of one year of work experience in an acute-care setting working with the pediatric population. The program requires 24 credits of study.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Required Core		
NRSG 6116	Advanced Health Assessment of the Neonate and Infant	3
NRSG 6262	Pediatric Pharmacology	2
NRSG 6265	Care of Child/Adolescent Health Problems	4
NRSG 6267	Care of the Critically Ill Child	4
Practicum		
NRSG 6461	Child/Adolescent Health Problems Practicum	4
NRSG 6463	Care of the Critically Ill Child Practicum	4

Elective

Code	Title	Hours
Complete 3 semester hours from the following subject area:		
NRSG		3

Program Credit/GPA Requirements

24 total semester hours required
 Minimum 3.000 GPA required

Nursing—Pediatric Nurse Practitioner, Acute and Primary Care, CAGS

This specialization is designed to prepare nurse practitioners (NPs) prepared in different specialties with the skills needed to care for children who are at risk across the continuum of care. For nearly two decades, our pediatric nurse practitioner (PNP) program has prepared primary care PNPs to provide community-based, culturally sensitive care. More recently, building on our foundation in evidence-based, interdisciplinary, urban healthcare, we expanded the PNP program into acute care. Students may study either full-time or part-time.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 5117	Advanced Pharmacology	2
NRSG 6116	Advanced Health Assessment of the Neonate and Infant	3
NRSG 6264	Care of Well Child/Adolescent Health Promotion	4
NRSG 6265	Care of Child/Adolescent Health Problems	4
Practicum		
NRSG 6460	Care of Well Child/Adolescent Health Promotion Practicum	4
NRSG 6461	Child/Adolescent Health Problems Practicum	4
NRSG 6463	Care of the Critically Ill Child Practicum	4
Clinical		
NRSG 5126	Pathophysiology for Advanced Practice	3

NRSG 6115	Health Assessment	3
NRSG 6262	Pediatric Pharmacology	2
NRSG 6267	Care of the Critically Ill Child	4
NRSG 6275	Urban Families at Risk: A Primary Care Approach	4

Program Credit/GPA Requirements

41 total semester hours required
 Minimum 3.000 GPA required

Nursing—Pediatric Nurse Practitioner, Primary Care, CAGS

This program is designed to prepare nurse practitioners (NPs) certified in a different specialty to provide high-quality primary care to children in a variety of settings. For nearly two decades, our pediatric nurse practitioner (PNP) program has prepared primary care PNPs to provide community-based, culturally sensitive care.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Theory		
NRSG 6264	Care of Well Child/Adolescent Health Promotion	4
NRSG 6265	Care of Child/Adolescent Health Problems	4
NRSG 6275	Urban Families at Risk: A Primary Care Approach	4
Practicum		
NRSG 6460	Care of Well Child/Adolescent Health Promotion Practicum	4
NRSG 6461	Child/Adolescent Health Problems Practicum	4

Elective

Code	Title	Hours
Complete 4 semester hours from the following subject area:		
NRSG		4

Program Credit/GPA Requirements

24 total semester hours required
 Minimum 3.000 GPA required

Nursing—Adult-Gerontology Nurse Practitioner, Acute Care, MS

The adult-gerontology acute-care program seeks to prepare nurses for advanced-practice roles as clinical experts, educators, and consultants. The program provides advanced study with a major focus on clinical experience and culminates with the Master of Science with a specialization in Nursing. Students may pursue either full-time or part-time study. Nurses who possess an MS are eligible for the Certificate of Advanced Graduate Study (CAGS) in this specialization.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Professional		
NRSNG 5118	Healthcare System and Professional Role Development	3
NRSNG 5121	Epidemiology and Population Health	3
Clinical		
NRSNG 5117	Advanced Pharmacology	2
NRSNG 5126	Pathophysiology for Advanced Practice	3
NRSNG 6115	Health Assessment	3
NRSNG 6325	Pharmacotherapeutics in Anesthesia and Critical Care Nursing	2
or NRSNG 6222	Pharmacology of Adults and Older Adults	
Theory		
NRSNG 6220	Nursing Management: Acute Episodic Illness	3
NRSNG 6221	Nursing Management: Critical and Chronic Illness	3
NRSNG 6241	Acute-Care Concepts in Nursing Practice	3
Practicum		
NRSNG 6420	Adult-Gerontology Acute-Care Nursing Practicum 1	2
NRSNG 6421	Adult-Gerontology Acute-Care Nursing Practicum 2	4
NRSNG 6422	Adult-Gerontology Acute-Care Nursing Practicum 3	4
Research		
NRSNG 7105	Translating Research Evidence into Practice	3
NRSNG 7110	Evidence-Based Practice Research Application	2
Elective		
Code	Title	Hours
Complete 3 semester hours in the following subject area:		3
NRSNG		

Program Credit/GPA Requirements

43 total semester hours required

Minimum 3.000 GPA required

Nursing—Adult-Gerontology Nurse Practitioner, Primary Care, MS

This specialization offers registered nurses with a bachelor's degree the opportunity to prepare for a career providing high-quality adult primary care services as an adult-gerontologic nurse practitioner (NP). Adult-gerontology NPs provide services to individuals across most of the life span in clinics, private practices, home care, long-term care, and day programs. Upon completion of the primary care program, graduates are eligible to sit for the adult-gerontology certification exam.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Professional		
NRSNG 5118	Healthcare System and Professional Role Development	3
NRSNG 5121	Epidemiology and Population Health	3
Required Core		
NRSNG 6249	Health Promotion of Adult/Older Adult	3
NRSNG 6253	Primary Care of Adult/Older Adult Health Problems	4
NRSNG 6254	Primary Care of Adult/Older Adult Complex Patients	4
Clinical		
NRSNG 5117	Advanced Pharmacology	2
NRSNG 5126	Pathophysiology for Advanced Practice	3
NRSNG 6115	Health Assessment	3
NRSNG 6222	Pharmacology of Adults and Older Adults	2
Practicum		
NRSNG 6449	Health Promotion of Adult/Older Adult Practicum	1
NRSNG 6450	Adult/Older Adult Practicum 1	4
NRSNG 6451	Adult/Older Adult Practicum 2	4
Research		
NRSNG 7105	Translating Research Evidence into Practice	3
NRSNG 7110	Evidence-Based Practice Research Application	2
Elective		
Code	Title	Hours
Complete 2 semester hours in the following subject area:		2
NRSNG		

Program Credit/GPA Requirements

43 total semester hours required

Minimum 3.000 GPA required

Nursing—Family Psychiatric Nurse Practitioner, MS

We offer specialized and flexible program options in psychiatric mental health nursing. Part-time and full-time programs are available. Classes are offered during the late afternoon and early evening hours to accommodate the multiple responsibilities of adult learners.

- For nurses who have a baccalaureate degree in nursing, the Master of Science (MS) option is a 43-semester-hour program.
- For nurses with master's preparation in other nursing specialties, the Certificate of Advanced Graduate Study (CAGS) option is a 24-semester-hour program.

- For those who wish to pursue a career in nursing and possess a baccalaureate degree or higher in a related (non-nursing) field, a direct-entry program is available.

Upon completion of the psychiatric mental health advanced-practice nursing graduate program curriculum, graduates are eligible to sit for available national certification exams in their area of practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 6281	Dimensions of Clinical Practice	3
NRSG 6282	Clinical Psychopharmacology	3
NRSG 6283	Psychobiological Bases of Mental Disorders	3
NRSG 6286	Contemporary Psychotherapies—Theory and Practice	3
Professional		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Clinical		
NRSG 5117	Advanced Pharmacology	2
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
Practicum		
NRSG 6480	Psychiatric Practicum across the Life Span 1	5
NRSG 6481	Psychiatric Practicum across the Life Span 2	5
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Elective

Code	Title	Hours
Complete 2 semester hours in the following subject area:		2
NRSG		

Program Credit/GPA Requirements

43 total semester hours required
 Minimum 3.000 GPA required

Nursing—Family Nurse Practitioner, Primary Care, MS

The family nurse practitioner program is a specialty track focusing on the primary healthcare of individuals and families. The program is offered in a hybrid format with the majority of the classes delivered online, coupled with live presentation sessions. Students are required to be on campus twice per semester.

Upon completion of the primary care program, graduates are eligible to sit for all national certification exams in their area of practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Professional		
NRSG 5117	Advanced Pharmacology	2
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
Family		
NRSG 6390	Family Care of the Adult/Older Adult Patient	4
NRSG 6392	Family Theory	2
NRSG 6393	Family Care of the Pediatric and Adolescent Patient	4
NRSG 6395	Healthcare of Women in Family Practice	2
Clinical		
NRSG 6222	Pharmacology of Adults and Older Adults	2
NRSG 6262	Pediatric Pharmacology	2
Practicum		
NRSG 6391	Practicum for NRSG 6390	4
NRSG 6394	Practicum for NRSG 6393	4
NRSG 6396	Practicum for NRSG 6395	4
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Program Credit/GPA Requirements

47 total semester hours required
 720 clinical hours plus 40 research practicum hours
 (60 clinical hours/1 semester credit)
 Minimum 3.000 GPA required

Nursing—Neonatal Nurse Practitioner, MS

Applicants are required to have at least two years of level 3 or greater of neonatal intensive care unit (NICU) experience before entering this program; most applicants have greater amounts of relevant experience. The neonatal nurse practitioner (NNP) program builds on the applicant's significant base of nursing knowledge and focuses on advanced nursing knowledge and clinical practice. In this program, students:

- Learn advanced diagnostic reasoning
- Carry out independent management of patients and their families
- Develop the expertise necessary to care for high-risk neonates and their families

- Become proficient at delivery room management of high-risk neonates

Successful graduates are prepared to make independent decisions in level 2 and level 3 NICUs, drawing on their experience and diagnostic abilities to affect lives every day.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 5117	Advanced Pharmacology	2
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
NRSG 5126	Pathophysiology for Advanced Practice	3
Clinical		
NRSG 6116	Advanced Health Assessment of the Neonate and Infant	3
NRSG 6230	Nursing Management: Critically Ill Neonatal 1	3
NRSG 6231	Nursing Management: Critically Ill Neonatal 2	3
NRSG 6232	Neonatal Pharmacology	2
Practicum		
NRSG 6430	Neonatal Clinical Practicum 1	4
NRSG 6431	Neonatal Clinical Practicum 2	4
NRSG 6432	Neonatal Clinical Practicum 3	2
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Elective

Code	Title	Hours
Complete 4 semester hours from the following subject area:		4
NRSG		

Program Credit/GPA Requirements

41 total semester hours required
Minimum 3.000 GPA required

Nursing—Pediatric Nurse Practitioner, Acute and Primary Care, MS

This specialization is designed to prepare nurses with the specialized skills needed to care for children who are at risk across the continuum of care. For nearly two decades, our pediatric nurse practitioner (PNP) program has prepared primary care PNPs to provide community-based, culturally sensitive care. More recently, building on our foundation in evidence-based, interdisciplinary, urban healthcare, we expanded the PNP program into acute care. Students may study either full-time or part-time.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Required Core		
NRSG 5117	Advanced Pharmacology	2
NRSG 6116	Advanced Health Assessment of the Neonate and Infant	3
NRSG 6264	Care of Well Child/Adolescent Health Promotion	4
NRSG 6265	Care of Child/Adolescent Health Problems	4
Professional		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Clinical		
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
NRSG 6262	Pediatric Pharmacology	2
NRSG 6267	Care of the Critically Ill Child	4
NRSG 6275	Urban Families at Risk: A Primary Care Approach	4
Practicum		
NRSG 6460	Care of Well Child/Adolescent Health Promotion Practicum	4
NRSG 6461	Child/Adolescent Health Problems Practicum	4
NRSG 6463	Care of the Critically Ill Child Practicum	4
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Program Credit/GPA Requirements

52 total semester hours required
Minimum 3.000 GPA required

Nursing—Pediatric Nurse Practitioner, Primary Care, MS

This specialization is designed to prepare nurses with the specialized skills needed to provide high-quality primary care to children in a variety of settings. For nearly two decades, our pediatric nurse practitioner (PNP) program has prepared primary care PNPs to provide community-based, culturally sensitive care.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
Professional		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Theory		
NRSG 6264	Care of Well Child/Adolescent Health Promotion	4
NRSG 6265	Care of Child/Adolescent Health Problems	4
NRSG 6275	Urban Families at Risk: A Primary Care Approach	4
Clinical		
NRSG 5117	Advanced Pharmacology	2
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
NRSG 6262	Pediatric Pharmacology	2
Practicum		
NRSG 6460	Care of Well Child/Adolescent Health Promotion Practicum	4
NRSG 6461	Child/Adolescent Health Problems Practicum	4
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Program Credit/GPA Requirements

41 total semester hours required
 Minimum 3.000 GPA required

Nursing—Direct Entry, MS

Part I: Prelicensure

The direct-entry nursing student enters the accelerated master’s program as a graduate student. The first 16 months (four semesters) of the program consist of intensive, sequential classes and clinical with combined undergraduate- and graduate-level courses. Students are then prepared to take the National Council Licensure Exam (NCLEX-RN) upon completion of 64 program semester hours. Students earn a Bachelor of Science in Nursing (BSN) after this part of the program. Financial aid will be granted on an undergraduate basis during the prelicensure phase of the program.

RN WORK EXPERIENCE

Once a student becomes a licensed RN, they participate in an online professional practicum for two semesters. The minimum full-time RN experience required for progression into the NP clinical practicums is one to two years, depending on the track. Students may begin core courses such as epidemiology during the required one to two years of RN experience with approval from the program director. Finding RN employment is the responsibility of the student, as it is professional nursing experience. Northeastern will help support the student in preparation for the job search. A leave of absence (LOA) may be granted on an individual basis to gain more nursing experience before returning to the master’s portion of the program.

Part II: Return to Master’s Specialty Tracks

In the master’s specialty track, students are required to take professional and research core classes, clinical core, and specialty clinical courses. Full- or part-time academic study is available to students. Most students return to the master’s segment of the program, taking course work as a part-time student while continuing to work and increase the amount of RN professional experience. Full-time study, however, is also an option. Completion of the MSN can take four to six semesters depending on the student’s pace and specialty track. Upon completion of the required specialty area credits, the student receives a Master of Science degree and is eligible to take the national certification exam in their area of advanced specialty nursing practice. Financial aid is awarded on a graduate basis during this portion of the program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or better in the **BSN clinical courses** is highly recommended for progression into the MSN portion of the program. Progression is at the graduate specialty director’s discretion.

A grade of B or better is required in **graduate-level courses: Advanced Pharmacology (NRSG 5117), Pathophysiology for Advanced Practice (NRSG 5126), and Health Informatics (NRSG 6306)**.

Code	Title	Hours
Required Core		
NRSG 2210	Influences on Health and Illness: A Nursing Perspective	3
NRSG 4610	Managing and Leading in Healthcare	4
NRSG 5117	Advanced Pharmacology	2
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6306	Health Informatics	3
Assessment		
NRSG 2220 and NRSG 2221	Nursing Interventions, Assessment, and Community Care and Lab for NRSG 2220	5
NRSG 3323 and NRSG 3324	Intermediate Interventions and Assessment and Lab for NRSG 3323	2
Theory and Clinical		
NRSG 3302 and NRSG 3303	Nursing with Women and Families and Clinical for NRSG 3302	5
NRSG 3320 and NRSG 3321	Nursing Care of Adults 1 and Clinical for NRSG 3320	6
NRSG 3400 and NRSG 3401	Nursing and the Promotion of Mental Health and Clinical for NRSG 3400	5
NRSG 3420 and NRSG 3421	Nursing Care of Adults 2 and Clinical for NRSG 3420	6
NRSG 4502 and NRSG 4503	Nursing Care of the Child and Clinical for NRSG 4502	6
NRSG 4604 and NRSG 4605	Public Health Community Nursing and Clinical for NRSG 4604	5
Research		
HLTH 5450	Healthcare Research	4

Practicum

NRSG 4995	Comprehensive Nursing Practicum	5
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Program Credit/GPA Requirements

64 total semester hours required

Minimum 3.000 GPA required

Nursing Administration, MS

The graduate program in nursing administration seeks to prepare students for traditional management/administrative careers and emerging leadership roles in quality and safety and health informatics in contemporary healthcare delivery settings. The curriculum offers a strong foundation in complex systems, organizational theory, quality improvement, finance and business, and leadership practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Professional		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2
Administration		
NRSG 6300	Healthcare Finance and Marketing	3
NRSG 6302	Health Policy and Law	3
NRSG 6306	Health Informatics	3
NRSG 6344	Healthcare Quality Improvement	3
NRSG 6444	Healthcare Systems and Quality Patient Care	3
Practicum		
NRSG 6510	Nursing Leadership Role Practicum 1	3
NRSG 6520	Nursing Leadership Role Practicum 2	3

Electives

Code	Title	Hours
Complete 6 semester hours from the following:		
NRSG 6301	Human Resources and Operations	6
NRSG 6307	Operational Informatics in Healthcare Organizations	
HINF 6220	Database Design, Access, Modeling, and Security	

Program Credit/GPA Requirements

38 total semester hours required

Minimum 3.000 GPA required

Nursing Anesthesia, MS

The nurse anesthesia program is housed in the Bouvé College of Health Sciences, which encourages interdisciplinary collaboration with other healthcare disciplines. This high level of integration is part of what has made us one of the highest nationally ranked programs in the Northeast in the *U.S. News and World Report* ranking.

Northeastern offers a traditional master's degree, an accelerated master's for certified registered nurse anesthetists (CRNAs), and a Certificate of Advanced Graduate Study (CAGS).

Students graduate in May each year and are eligible to sit for the national certification examination for nurse anesthetists, administered by the Council on Certification of Nurse Anesthetists.

Whether in a planned procedure or an emergency, a small local hospital or a regional center, a rural or urban setting, and throughout the life cycle, the nurse anesthetist is a critical member of the healthcare team. In fact, CRNAs administer more than 30 million anesthetics each year in the United States.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Required Core		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Didactic		
NRSG 6320	Role/Practice Issues in Nurse Anesthesia	3
NRSG 6321	Conceptual Basis of Nurse Anesthesia Practice 1	3
NRSG 6322	Conceptual Basis of Nurse Anesthesia Practice 2	3
NRSG 6324	Chemistry and Physics in Anesthesia	3
NRSG 6325	Pharmacotherapeutics in Anesthesia and Critical Care Nursing	2
NRSG 6333	Conceptual Basis of Nurse Anesthesia Practice 3	3
NRSG 6336	Advanced Concepts in Nurse Anesthesia Practice	3
Clinical		
<i>Course Work</i>		
NRSG 5117	Advanced Pharmacology	2
NRSG 5126	Pathophysiology for Advanced Practice	3
NRSG 6115	Health Assessment	3
<i>Elective</i>		
Complete a minimum of 2 semester hours of elective course work.		2
Practicum		
NRSG 6530	Nurse Anesthesia Practicum 1	2
NRSG 6534	Nurse Anesthesia Practicum 2	4

NRSG 6535	Nurse Anesthesia Practicum 3	4
Clinical Experiences		
NRSG 6540	Advanced Clinical Experiences in Nurse Anesthesia 1	1
NRSG 6541	Advanced Clinical Experiences in Nurse Anesthesia 2	1
NRSG 6542	Advanced Clinical Experiences in Nurse Anesthesia 3	1
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2

Program Credit/GPA Requirements

54 total semester hours required
 Minimum 3.000 GPA required

Nursing and Business Administration, MS/MBA

To earn the degree, you must complete 12 courses in nursing and 12 in business administration. The nursing curriculum integrates a two-semester practicum with the theory and knowledge base appropriate to advanced roles of the nurse manager; the business courses cover the full complement of functional courses delivered in four years of part-time study, although you can take up to seven years to complete the program. All courses are offered late in the day or evening at the Boston campus.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Business Administration Requirements

Code	Title	Hours
Required Core		
ACCT 6272	Financial Statement Preparation and Analysis	2.25
ACCT 6273	Identifying Strategic Implications in Accounting Data	2.25
ENTR 6200	Enterprise Growth and Innovation	3
FINA 6200	Value Creation through Financial Decision Making	3
INTB 6200	Managing the Global Enterprise	3
MECN 6200	Global Competition and Market Dominance	3
MGSC 6200	Information Analysis	3
MGSC 6206	Management of Service and Manufacturing Operations	3
MKTG 6200	Creating and Sustaining Customer Markets	3
STRT 6200	Strategic Decision Making in a Changing Environment	3
Electives		
Business Specialization I and Business Specialization II		4

Nursing Requirements

A grade of B or higher is required in all course work.

Code	Title	Hours
Professional		
NRSG 5118	Healthcare System and Professional Role Development	3
NRSG 5121	Epidemiology and Population Health	3
Research		
NRSG 7105	Translating Research Evidence into Practice	3
NRSG 7110	Evidence-Based Practice Research Application	2
Theory		
NRSG 6301	Human Resources and Operations	3
NRSG 6302	Health Policy and Law	3
NRSG 6306	Health Informatics	3
NRSG 6344	Healthcare Quality Improvement	3
NRSG 6444	Healthcare Systems and Quality Patient Care	3
Practicum		
NRSG 6510	Nursing Leadership Role Practicum 1 (112 Practicum Hours)	3
NRSG 6520	Nursing Leadership Role Practicum 2 (112 Practicum Hours)	3
Total 224 practicum hours		

Program Credit/GPA Requirements

64.5 total semester hours required
 Minimum 3.000 GPA required

Nursing Informatics, Graduate Certificate

Globally connected networks, big data, and innovative decision analytics are rapidly shaping the future of healthcare systems and patient care delivery. This graduate certificate blends nursing science with knowledge and skills in information science, business management, and healthcare to prepare the student to:

- Utilize nursing informatics concepts to support decision making, work flows, and improve healthcare outcomes
- Accelerate the transformation of data into information and knowledge
- Design, implement, and evaluate health information systems
- Employ evidence-based strategies to promote data integrity and security
- Apply business, economic, and entrepreneurial principles to advance strategic business goals
- Become an innovative informatics healthcare leader to participate in efforts to improve human health

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Grade of B or higher is required in all courses.

Core Requirements

Code	Title	Hours
HINF 6202	Business of Healthcare Informatics	3
NRSG 6306	Health Informatics	3

NRS 6307	Operational Informatics in Healthcare Organizations	3
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- Pharmaceutical Sciences (p. 276)
- Pharmacology (p. 276)

Elective

Code	Title	Hours
Complete one of the following:		
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	3
HINF 6240	Improving the Patient Experience through Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

School of Pharmacy

Website (<http://www.northeastern.edu/bouve/pharmacy>)

John R. Reynolds, PharmD

Professor and Dean

Pharmaceutical Sciences

140 The Fenway

617.373.3406

617.373.8886 (fax)

pharmscigrad@northeastern.edu

Doctor of Pharmacy (PharmD) Program

140 Fenway

617.373.3380

617.373.7655 (fax)

PharmDadmissions@northeastern.edu

The School of Pharmacy is dedicated to excellence in pharmacy-related education, research, and service, including the provision of patient care. We seek to prepare students with knowledge, skills, and values for careers in pharmacy practice and the pharmaceutical sciences. Our programs promote intellectual growth, professionalism, and lifelong learning. Through the generation and dissemination of new knowledge and through scholarship and community service, the school contributes to improved individual and population health.

Programs

Doctor of Philosophy (PhD)

- Biomedical Sciences (p. 268)
- Medicinal Chemistry (p. 269)
- Pharmaceutical Sciences (p. 269)
- Pharmacology (p. 270)

Doctor of Pharmacy (PharmD)

- Doctor of Pharmacy (p. 271)
- Doctor of Pharmacy—Direct Entry (p. 271)

Master of Science (MS)

- Biomedical Nanotechnology (p. 274)
- Biomedical Sciences (p. 275)
- Medicinal Chemistry (p. 275)

Dual Degree

- Pharmacy and Public Health, PharmD/MPH (p. 251)

Biomedical Sciences, PhD

The department offers a PhD program in biomedical science. Increasingly, scientific work is becoming interdisciplinary. In response to this trend, we allow the student to focus on more than one area in biomedical science. The concept is appropriate for both those entering the field, as well as those currently employed in the field, including research technicians, clinical laboratory workers, science teachers, and science administrators. For those currently employed, the flexibility of our program can enhance their performance in a present position or open up new employment opportunities.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination

Annual review

Dissertation committee

Dissertation proposal

Dissertation defense

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Seminar		
Complete the following (repeatable) course twice:		2
PHSC 6300	Pharmaceutical Science Seminar	
Colloquium		
PHSC 6810	Pharmaceutical Science Colloquium	1
Required Core		
Complete 13–18 semester hours from the following:		13-18
PHSC 5100	Concepts in Pharmaceutical Science	
PHSC 5102	Concepts in Pharmaceutical Science 2	
PHSC 5300	Pharmaceutical Biochemistry	
or PHSC 7010	Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	
PHSC 6212	Research Skills and Ethics	
or BIOL 6381	Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	
PHSC 6216	Human Physiology and Pathophysiology	
Pharmaceutics		
PMST 6250	Advanced Physical Pharmacy	2
PMST 6252	Pharmacokinetics and Drug Metabolism	3
PMST 6254	Advanced Drug Delivery System	3

Electives

Code	Title	Hours
Complete 7–12 semester hours in the following subject areas:		7-12
BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		

Research and Dissertation

Code	Title	Hours
Qualifying Exam		
PHSC 8940	Doctoral Training and Research	1
Proposal Preparation		
PHSC 9681	Doctoral Proposal	2
Dissertation		
Complete the following (repeatable) course twice:		6
PHSC 9990	Dissertation	

Program Credit/GPA Requirements

45 total semester hours required
Minimum 3.000 GPA required

Medicinal Chemistry, PhD

This specialization offered by the Center for Drug Discovery (CDD) trains students in the design and synthesis of novel, biologically active compounds and in the study of their mechanisms of action using biochemical, biophysical, and pharmacological approaches. Specializations are available in synthetic, biochemical/pharmacological, and biophysical medicinal chemistry. These will be targeted to treat drug abuse; addiction; and other indications such as neuropathic pain, obesity, neuropsychiatric disorders (psychoses, ADHD, depression, anxiety, eating disorders); and neurodegenerative disorders.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Seminar		
Complete the following (repeatable) course twice:		2
PHSC 6300	Pharmaceutical Science Seminar	
Colloquium		
PHSC 6810	Pharmaceutical Science Colloquium	1
Required Core		
PHSC 5100	Concepts in Pharmaceutical Science	2
PHSC 5102	Concepts in Pharmaceutical Science 2	2
PHSC 6212	Research Skills and Ethics	1
or BIOL 6381	Ethics in Biological Research	
Chemistry		
CHEM 5612	Principles of Mass Spectrometry	3

CHEM 5626	Organic Synthesis 1	3
CHEM 5628	Principles of Spectroscopy of Organic Compounds	3
CHEM 5672	Organic Synthesis 2	3
CHEM 5676	Bioorganic Chemistry	3
PHSC 5400	Principles of Drug Design	3
PHSC 6222	The Chemistry and Biology of Drugs of Abuse	2
PHSC 6224	Behavioral Pharmacology and Drug Discovery	2

Electives

Code	Title	Hours
Complete 6–7 semester hours in the following subject areas:		6-7
BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		

Research and Dissertation

Code	Title	Hours
Research		
PHSC 8940	Doctoral Training and Research	1
Proposal Preparation		
PHSC 9681	Doctoral Proposal	2
Dissertation		
Complete the following (repeatable) course twice:		
PHSC 9990	Dissertation	3

Program Credit/GPA Requirements

45 total semester hours required
Minimum 3.000 GPA required

Pharmaceutical Sciences, PhD**Pharmaceutics and Drug Delivery Systems**

Students studying pharmaceutics and drug delivery will be thoroughly exposed to the fundamentals of physical pharmacy and pharmaceutics in addition to being trained in several more specialized areas such as:

- Novel drug delivery systems
- Nanomedical technologies
- Physical pharmacy
- Biopharmaceutics and pharmacokinetics

With exposure to these various facets of pharmaceutics, successful graduates are poised to understand and assimilate the field of modern pharmaceutics. A PhD degree in pharmaceutics is a research degree. While course work plays an important role, students become a real participant in the science of pharmaceutics in the laboratory. Faculty research covers a broad range of scientific interests, including pharmacokinetic toxicodynamics of anticancer agents, use of biomaterials and synthetic polymeric systems in design of drug delivery systems, passive and active targeting of therapeutic agents, cardiovascular targeting of drugs, novel delivery systems for proteins and peptides, and mathematical modeling of endogenous compounds.

Interdisciplinary Option

The interdisciplinary option is intended to meet the needs of students interested in combining courses and skills from two areas of specialization. At least one of the specialization areas must come from within the college. The second area may come from a department in

another college at Northeastern University, such as biology, chemistry, or engineering. Students electing the interdisciplinary option must fulfill the same requirements as all other PhD candidates.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Seminar		
Complete the following (repeatable) course twice:		2
PHSC 6300	Pharmaceutical Science Seminar	
Colloquium		
PHSC 6810	Pharmaceutical Science Colloquium	1
Required Core		
Complete 13–18 semester hours from the following:		13-18
PHSC 5100	Concepts in Pharmaceutical Science	
PHSC 5102	Concepts in Pharmaceutical Science 2	
PHSC 5300 or PHSC 7010	Pharmaceutical Biochemistry Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	
PHSC 6212 or BIOL 6381	Research Skills and Ethics Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	
PHSC 6216	Human Physiology and Pathophysiology	
Pharmaceutics		
PMST 6250	Advanced Physical Pharmacy	2
PMST 6252	Pharmacokinetics and Drug Metabolism	3
PMST 6254	Advanced Drug Delivery System	3

Electives

Code	Title	Hours
Complete 7–12 semester hours from the following subject areas:		7-12
BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		

Research and Dissertation

Code	Title	Hours
Qualifying Examination		
PHSC 8940	Doctoral Training and Research	1
Proposal Preparation		
PHSC 9681	Doctoral Proposal	2
Dissertation		
Complete the following (repeatable) course twice:		6
PHSC 9990	Dissertation	

Program Credit/GPA Requirements

45 total semester hours required
Minimum 3.000 GPA required

Pharmacology, PhD

The PhD in pharmacology specialization allows a student to specialize in the study of the actions of drugs. In addition to developing a sound knowledge base through course work and seminars, the program is designed to strengthen the student's ability to comprehend and to evaluate critically the current literature, allowing the conduct of significant independent research. Recent graduates with a PhD in pharmacology have found employment in academic or industrial research positions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Seminar		
Complete the following (repeatable) course twice:		2
PHSC 6300	Pharmaceutical Science Seminar	
Colloquium		
PHSC 6810	Pharmaceutical Science Colloquium	1
Required Core		
Complete 13–18 semester hours from the following:		13-18
PHSC 5100	Concepts in Pharmaceutical Science	
PHSC 5102	Concepts in Pharmaceutical Science 2	
PHSC 5300 or PHSC 7010	Pharmaceutical Biochemistry Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	
PHSC 6212 or BIOL 6381	Research Skills and Ethics Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	
PHSC 6216	Human Physiology and Pathophysiology	
Pharmacology		
PMCL 6260	Pharmacology 1	2
PMCL 6261	Pharmacology 2	2
PMCL 6262	Receptor Pharmacology	2

Electives

Code	Title	Hours
Complete 9–14 semester hours from the following subject areas: BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		9-14

Research and Dissertation

Code	Title	Hours
Research		
PHSC 8940	Doctoral Training and Research	1
Proposal Preparation		
PHSC 9681	Doctoral Proposal	2
Dissertation		
Complete the following (repeatable) course twice:		6
PHSC 9990	Dissertation	

Program Credit/GPA Requirements

45 total semester hours required

Minimum 3.000 GPA required

Pharmacy, PharmD

Program requirements that follow relate to the final year of the six-year Doctor of Pharmacy (PharmD) program only. For information regarding years one through five of this program, please see the *Undergraduate Catalog* Doctor of Pharmacy (Pharmacy, PharmD) webpage.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Complete 36 semester hours in the following range:		36
PHMD 6440 to PHMD 6474		

Program Credit/GPA Requirements

36 total semester hours required

Minimum 3.000 GPA required

Pharmacy, PharmD—Direct Entry

The School of Pharmacy (SOP) offers the professional Doctor of Pharmacy degree (PharmD). The direct-entry admission pathway for this program requires that students complete a BS or BA from an accredited institution with a preferred prerequisite grade-point average (GPA) of 3.000. The following prerequisite courses and credits are required:

Requirements	Credits
Chemistry 1 with lab	4
Chemistry 2 with lab	4
General Biology 1 with lab	4
General Biology 2 with lab	4
Calculus	4
Organic Chemistry 1 with lab	4
Organic Chemistry 2 with lab	4
Biochemistry	4
General Psychology	4
English—writing-intensive	4
Human Physiology 1 with lab	4
Human Physiology 2 with lab	4
Physics with lab	4
Arts or humanities electives	4

Direct entry into the first professional year of the PharmD program offers students a four-year graduate course of study that fully integrates campus-based learning with experiential learning, including the university's signature cooperative education (co-op) program, to provide students with the knowledge, skills, and abilities necessary to succeed in the pharmacy profession. Our students promote and ensure the safe and effective use of drugs and provide medication therapy management services. In addition to preparing and dispensing prescribed medications, our students provide information to patients about medications and their uses; advise physicians, other prescribers, and other healthcare practitioners on medication selection, dosages, interactions, and adverse effects; and monitor patient responses to drug therapy.

Our students are well equipped to provide patient care services in a variety of settings. Most of our graduates work in community pharmacies or in healthcare facilities such as hospitals and ambulatory clinics. Additional practice opportunities exist in health maintenance organizations, private practice groups, long-term-care facilities, home healthcare, the Public Health Service, the armed services, and law enforcement agencies such as the Federal Drug Enforcement Administration. Graduates may also find employment in drug development, marketing and research within the pharmaceutical industry, colleges of pharmacy, and professional association management. In addition, many of our graduates go on to pharmacy practice residencies, fellowships, and leading graduate programs.

Doctor of Pharmacy students are admitted with the expectation that by working with faculty, staff, and each other, they will develop the knowledge, skills, and attitudes necessary for academic and professional success. Students follow academic progression plans for their respective years of graduation. Any deviation from the prescribed curriculum will require faculty/staff permission and an approved plan of study from the SOP Academic Standing Committee.

The pharmacy curriculum includes introductory (cooperative education) and advanced pharmacy practice experiences (IPPEs and APPEs). These pharmacy practice experiences are provided primarily under the direct supervision of qualified pharmacist preceptors and occasionally with other qualified healthcare professionals. The school is affiliated with many world-class practice sites throughout the United States, providing students with access to experienced clinicians and scholars. Although every effort is made to accommodate individual circumstances and requests, students should be prepared to travel outside the Boston area to complete some of their pharmacy practice experiences. Availability of a car may be required, as some sites are not accessible by public transportation. All expenses associated with pharmacy practice experiences, including travel and housing, are the responsibility of the student.

IPPEs are competitive placements that are based on job availability in a geographic region. The placements are facilitated by SOP cooperative education coordinators. Students are required to earn a satisfactory (S) grade on one IPPE in a community setting and on one IPPE in an institutional/hospital practice setting.

APPE placements are provided based on site/preceptor availability and the final approval of the SOP Office of Experiential Education (OEE). Students may be able to petition the OEE for out-of-system APPEs; however, availability for such requests is limited.

To be eligible for a PharmD, a student must successfully complete all courses in the curriculum, including the IPPEs (co-op) and APPEs; meet the academic progression standards of the program; meet the technical standards of the program; and satisfy all other requirements as stated in the *Bouvé College of Health Sciences Undergraduate Student*

Information Manual. The pharmacy program, which is fully accredited by the Accreditation Council for Pharmacy Education (ACPE) (info@acpe-accredit.org), subscribes and adheres to the standards established by ACPE.

Pharmacy graduates must meet specific requirements to qualify for professional licensure in the state where they plan to practice as a registered pharmacist. These requirements include graduating from an accredited school of pharmacy, passing national and state board examinations, and completing internship hours. The internship is a period of practical experience conducted under the supervision of a registered pharmacist. Massachusetts requires 1,500 internship hours, all of which are satisfied through IPPEs (co-op) and APPEs.

Professional and/or legal exigencies arise from time to time, which may necessitate changes in a pharmacy course, progression, and/or graduation requirements. Students should review their status with academic advisors on a timely basis and refer to current publications for updated information.

Requirements for the PharmD Pharmacy Practice Experiences (PPEs)

Requirements for the successful completion of the PharmD PPEs include:

1. Evidence of health clearance from University Health and Counseling Services before placements at any PPE site.
2. Satisfactory completion of any additional site-specific requirements including, but not limited to, criminal record information (CORI), urine drug screens, and verification of immunization status. All fees associated with these requirements are the responsibility of the student.

If the student learns the urine screen (aka test #1) is positive, the student will notify the OEE (pharmacyoe@northeastern.edu) and immediately complete a second urine screen (test #2). A professional concern form will be completed based on test #1 results.

- If that urine screen (aka test #2) is negative (-), the student will be allowed to continue the PPEs. However, the student will be asked to complete a random urine screen (aka test #3) at a time determined by the OEE. If this urine screen (test #3) is positive (+), the student will be administratively removed from the active PPEs and graduation may be delayed. A second professional concern form will be completed, based on test #3 results. The return to PPEs will occur once a repeat urine test is negative. That repeat negative test will be followed up by a random urine screen at a time determined by the OEE.
 - If the urine screen (aka test #2) is positive (+), the student will be administratively removed from the PPEs and graduation may be delayed. The return to PPEs will occur once a repeat urine screen is negative. That negative screen will be followed up by a random urine screen at a time determined by the OEE. A second professional concern form will be completed based on a positive test #3 result.
3. Adherence to the school's code of professional conduct and university's code of conduct policies while off-campus.
 4. Maintenance of an active, pharmacy intern license in every state where the student completes an experience.
 5. Compliance with site-specific requirements (via site descriptions) and completion of site requests within specified deadlines. Failure to

complete these requirements as directed will likely result in delay of graduation.

6. Maintenance of a portfolio throughout the professional years and completion of all portfolio submission requirements within specified deadlines.
7. Students are expected to adhere to the policies and standards of their program major as stated to progress through their curriculum as planned. Students seeking any exceptions to the program policies and standards specified for their program major must present a petition before the School of Pharmacy Academic Standing Committee.

Given programmatic requirements, coupled with concerns over the loss of therapeutic knowledge, requests for a general leave of absence:

- Must comply with all stated Northeastern University general policies, regardless of the academic year.
- May be made at any time period during the freshman through P2 years.
- During the P3 academic year, any request for a general leave must be made no later than February 1 of the given academic year. Requests after this date for students in the P3 year will not be permitted.
- During the P4 academic year, requests for a general leave cannot be made at any time.

Technical Standards

The Doctor of Pharmacy program at Northeastern University is a rigorous and challenging academic program that requires students to possess specific characteristics and abilities within the cognitive, affective, and psychomotor domains, referred to here as technical standards. To successfully progress in and ultimately complete the didactic, laboratory, and experiential components of the Doctor of Pharmacy program, students must meet the standards described below.

INTELLECTUAL ABILITIES

Students must have well-developed problem-solving and critical-thinking skills. Cognitive function must be appropriate to integrate, evaluate, and apply information gained through measurement, analysis, calculation, and reasoning. Students must have the capacity to learn efficiently in classroom, laboratory, small group, and experiential settings and through independent study. Students are required to demonstrate the ability to integrate course content knowledge with clinical practice applications to optimize medication therapy management.

COMMUNICATION SKILLS

Students must be able to communicate effectively with colleagues, professors, patients, families, and healthcare providers. This includes efficiently comprehending, speaking, reading, and writing in English. Students must be able to process and use appropriate nonverbal cues and be proficient in the use of electronic communication media.

BEHAVIORAL AND SOCIAL ATTRIBUTES

Students must demonstrate professionalism, maturity, integrity, honesty, compassion, and respect when relating to others. Students must have sufficient mental and emotional health to complete work and responsibilities using good judgment. Students must be able to tolerate and adapt to stressful workloads and situations and modify behavior based on constructive criticism. Students must be able

to function in accordance with the legal, ethical, and professional standards of practice.

OBSERVATION AND MOTOR SKILLS

Students must have functional use of visual, auditory, and tactile senses. Students must be able to observe and perform experiments, physical assessments, patient interviews, and medication order processing. Students must be able to distinguish physical characteristics of medications by inspection. Students must have coordination of gross and fine muscular movements sufficient to perform pharmacy-related tasks including compounding and dispensing medications, administering medications, and using computers and other technology necessary for learning and professional practice.

College Academic Standards—Professional Courses

PharmD students must receive a grade of C or better in professional courses.

- Professional courses are those required courses taught within the major/college as identified by course subject code: PHMD, PHSC.
- Courses in the above-listed subjects that are taken as electives are exempt from the C or better rule, and the university's minimum satisfactory grade will be accepted.
- For PharmD students, failure to earn a satisfactory grade (S) in a co-op will be counted as a professional course failure.

Progression within Bouvé

The requirements for any graduate degree or certificate of advanced study must yield a cumulative GPA of 3.000 or higher as stated in this catalog (p. 235).

- To progress into the subsequent year of professional courses, students must have completed all professional prerequisites with the required minimum passing grade.
- To progress into the subsequent semester of professional courses, students must have completed all professional courses with a grade of C or better.
- Students who incur an incomplete grade in a prerequisite course must obtain approval from their academic advisor, upon consultation with the department faculty, prior to progression into the subsequent course(s).

Academic Dismissal from Major

PharmD students in the Bouvé College of Health Sciences will be dismissed from their major effective the following academic semester for any of the reasons noted below:

- Failure to earn a grade of C or better in three professional courses, regardless of remediation. Lecture and clinical/lab components for the same class are considered as *one* professional course failure. Within the PharmD program, each specific professional course (with separate registration number) will be counted as a separate failure even if content is related.
- Failure to earn the minimum required grade in the same course twice.
- Failure to maintain a GPA of 3.000 after one semester of probation.
- For PharmD students, the expected graduation date may not be changed more than twice.
- The PharmD program monitors and promotes the development of professional behaviors in its students in order to ensure appropriate professionalism in the classroom, local and global communities, and

clinical settings. Breach of adherence to these standards may result in dismissal from the program.

Academic Appeals

Students who believe that they were erroneously, capriciously, or otherwise unfairly treated in an academic or cooperative education decision may petition to appeal the decision. Refer to the *Bouvé Graduate Student Policies and Regulations Manual*, which details the Bouvé College of Health Sciences Appeals Process, and the University Graduate Student Academic Appeals Procedures (p. 33).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
ENGW 3306	Advanced Writing in the Health Professions	4
PHMD 2350	Healthcare Systems	3
PHMD 3450	Research Methodology and Biostatistics	3
PHMD 5223	Evidence-Based Medicine	2
PHMD 5250	Pharmacy Care Management	3
PHMD 5330	Jurisprudence	3
Pharmaceutics		
PHSC 2330	Immunology	3
PHSC 3411	Pharmaceutics 1	4
PHSC 3412	Pharmaceutics 2	4
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3
PHSC 5360	Anti-Infectives	4
Pharmacology/Medicinal Chemistry		
PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5
Disease Management		
PHMD 4611 and PHMD 4612	Comprehensive Disease Management 1 and Comprehensive Disease Management 1 Seminar	7
PHMD 4621	Comprehensive Disease Management 2	6
PHMD 4622	Comprehensive Disease Management 2 Seminar	1
PHMD 4623	Comprehensive Disease Management 2 Skills Lab	0.5
PHMD 4631	Comprehensive Disease Management 3	6
PHMD 4632	Comprehensive Disease Management 3 Seminar	1
PHMD 4633	Comprehensive Disease Management 3 Skills Lab	0.5
PHMD 4641	Comprehensive Disease Management 4	6
PHMD 4642	Comprehensive Disease Management 4 Seminar	1
PHMD 4643	Comprehensive Disease Management 4 Skills Lab	0.5

Practice

PHMD 1201 and PHMD 1202	Introduction to Pharmacy Practice and Lab for PHMD 1201	3
PHMD 2310 and PHMD 2311	Educational and Behavioral Interventions in Pharmacy Practice and Lab for PHMD 2310	2.5
PHMD 5270	Economic Evaluation of Pharmaceuticals and Pharmacy Practice	2
PHMD 5450	Advanced Pharmacy Practice Experience Preparatory Seminar	1

Advanced Practice Experiences**Electives**

Code	Title	Hours
Complete 36 semester hours in the following range:		36
PHMD 6440 to PHMD 6474		

Program Credit/GPA Requirements

132 total semester hours required
Minimum 3.000 GPA required

Plan of Study**Year 1**

Fall	Hours	Spring	Hours	Summer Full Semester	Hours	
ENGW 3306	4	Advanced Practice Experience	2.5	PHSC 3412	4	
PHMD 1201 and PHMD 1202	3			PHSC 3419	1	
PHSC 3411	4			PHSC 4502	5	
PHSC 4501	5			PHMD 2310 and PHMD 2311	2.5	
				PHMD 2350	3	
		16			2.5	15.5

Year 2

Fall	Hours	Spring	Hours	Summer Full Semester	Hours	
Advanced Practice Experience	2.5	PHMD 3450	3	PHMD 4621	6	
		PHMD 4611 and PHMD 4612	7	PHMD 4622	1	
		PHSC 2330	3	PHMD 4623	0.5	
		PHSC 3430	3	PHMD 5223	2	
				PHMD 5330	3	
				PHSC 5360	4	
		2.5			16	16.5

Year 3

Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PHMD 4631	6	PHMD 4641	6	Complete 12 semester hours in the following range:	12

PHMD 4632	1	PHMD 4642	1	PHMD 6440 to PHMD6474	
PHMD 4633	0.5	PHMD 4643	0.5		
PHMD 5250	3	PHMD 5270	2		
		PHMD 5450	1		
		10.5			12

Year 4

Fall	Hours	Spring	Hours
Complete 12 semester hours in the following range:	12	Complete 12 semester hours in the following range:	12
PHMD 6440 to PHMD 6474		PHMD 6440 to PHMD 6474	
		12	12

Total Hours: 126

Biomedical Nanotechnology, MS

This Master of Science program in biomedical nanotechnology incorporates aspects of the pharmaceutical sciences curriculum with courses in nanotechnology, entrepreneurship, and law. The combination of these fields results in a unique curriculum that offers students an opportunity to obtain skills not only in the relevant science but also in leadership, business, and intellectual property law. Furthermore, the program directly addresses a core mission of the university: the provision of practice-oriented educational programs in major scientific disciplines.

Program Requirements

Prerequisites: calculus, organic chemistry, biochemistry, and physiology.

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C- or higher is required in each course.

Code	Title	Hours
Pharmaceutical		
CHME 5699 or PMST 6252	Special Topics in Chemical Engineering Pharmacokinetics and Drug Metabolism	4
PHSC 5100	Concepts in Pharmaceutical Science	2
PHSC 5300	Pharmaceutical Biochemistry	2
PHSC 5305	Professional Development for Pharmaceutical Sciences	1
PHSC 6212 or BIOL 6381	Research Skills and Ethics Ethics in Biological Research	1
PHSC 6300	Pharmaceutical Science Seminar	1
PHSC 7010	Pharmaceutical Sciences Laboratory	4
PMST 6254	Advanced Drug Delivery System	3
Nanomedicine		
NNMD 5270	Introduction to Nanomedicine	3
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market	3

Business and Enterprise

ENTR 6200	Enterprise Growth and Innovation	3
ENTR 6212	Business Planning for New Ventures	3
LS 6101	Introduction to Legal Studies 1: Law and Legal Reasoning	3

Research and Internship

Complete 2 semester hours from the following repeatable courses:

PHSC 5976	Directed Study	
PHSC 6401	Pharmaceutical Science Internship	
PHSC 6984	Pharmaceutical Science Research	

Program Credit/GPA Requirements

34 total semester hours required

Minimum 3.000 GPA required

Biomedical Sciences, MS

The department offers MS programs in biomedical science. Increasingly, scientific work is becoming interdisciplinary. In response to this trend, we allow the student to focus on more than one area in biomedical science. The concept is appropriate for both those entering, as well as those currently employed in the field, including research technicians, clinical laboratory workers, science teachers, and science administrators. For those currently employed, the flexibility of our program can enhance their performance in a present position or open up new employment opportunities. Graduates of the program will be well prepared to enter related PhD programs at the university.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Required Core		
Complete 13–18 semester hours from the following:		13-18
PHSC 5100	Concepts in Pharmaceutical Science	
PHSC 5102	Concepts in Pharmaceutical Science 2	
PHSC 5300	Pharmaceutical Biochemistry	
or PHSC 7010	Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	
PHSC 6212	Research Skills and Ethics	
or BIOL 6381	Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	
PHSC 6216	Human Physiology and Pathophysiology	
Pharmaceutics		
PMST 6252	Pharmacokinetics and Drug Metabolism	3
PMST 6250	Advanced Physical Pharmacy	2
PMST 6254	Advanced Drug Delivery System	3

Electives

Code	Title	Hours
Complete 7–12 semester hours in the following subject areas: PHSC, PMCL, PMST, BIOL, CHEM, NNMD, BIOT		7-12
Total Hours		7-12

Program Credit/GPA Requirements

33 total semester hours required

Minimum 3.000 GPA required

Medicinal Chemistry, MS

This Master of Science program integrates aspects of contemporary medicinal chemistry and pharmacology, emphasizing topics most relevant to therapeutics design, discovery, and action. The core curriculum is an interdisciplinary combination of synthetic organic chemistry, bioorganic chemistry, analytical chemistry, and pharmaceutical sciences courses. In-depth electives are available in these areas. The program offers students the opportunity to develop knowledge of medicinal chemistry that can be applied to a practice-oriented career in the pharmaceutical industry.

Undergraduate prerequisites are general chemistry, organic chemistry, biochemistry, or cell/molecular biology.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Required Core		
PHSC 5100	Concepts in Pharmaceutical Science	2
PHSC 5102	Concepts in Pharmaceutical Science 2	2
PHSC 6212	Research Skills and Ethics	1
or BIOL 6381	Ethics in Biological Research	
Chemistry		
CHEM 5612	Principles of Mass Spectrometry	3
CHEM 5626	Organic Synthesis 1	3
CHEM 5628	Principles of Spectroscopy of Organic Compounds	3
CHEM 5672	Organic Synthesis 2	3
CHEM 5676	Bioorganic Chemistry	3
PHSC 5400	Principles of Drug Design	3
PHSC 6222	The Chemistry and Biology of Drugs of Abuse	2
PHSC 6224	Behavioral Pharmacology and Drug Discovery	2

Electives

Code	Title	Hours
Complete 6–7 semester hours in the following subject areas: BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		6-7

Program Credit/GPA Requirements

33 total semester hours required

Minimum 3.000 GPA required

Pharmaceutical Sciences, MS

Pharmaceutical science is a problem-solving discipline concerned with the discovery, design, and use of drugs. Pharmaceutical scientists find new targets for drug development; research how drugs work at a molecular level; and determine how drugs' properties, dosages, and delivery systems affect their performance. Northeastern has a well-deserved reputation among students, researchers, and other universities. Our department has five interlinked Centers of Research Excellence that pursue specific areas of pharmaceutical and chemical research: the Center for Drug Discovery, the New England Inflammation and Tissue Protection Institute, the Center for Pharmaceutical Biotechnology and Nanomedicine, the Center for Translational Imaging, and the Environmental Cancer Research Program. Northeastern offers many of its classes in the evening to accommodate the needs of the working community. Many students in the pharmaceutical science MS program complete their degree on a part-time basis. For those interested in discovery, problem solving, and cutting-edge research in one of the world's foremost scientific and medical environments, Northeastern University's School of Pharmacy in the Bouvé College of Health Sciences is the place to study pharmaceutical science.

Pharmaceutical science is inherently interdisciplinary, and this is reflected in the availability of several options at both the MS and PhD levels. The main options are pharmaceutics and drug delivery, pharmacology, and medicinal chemistry. The curriculum for each of these options allows a degree of flexibility in terms of specific courses taken, and the examples below are not absolute but reflect students' most common choices made with the advice of faculty members. Even more flexibility is possible with the Master of Science in Pharmaceutical Sciences (interdisciplinary concentration).

Just as cars are useless without roads, drugs are useless without an effective delivery system. This is especially important in contemporary pharmaceutical research as new chemical entities are either too hydrophobic (e.g., many anticancer drugs) or hydrophilic and highly labile (e.g., nucleic acids). The Bouvé College of Health Sciences' pharmaceutics faculty and students are developing the pathways that bring small-molecule drugs and biological therapies directly to the target cells.

Our comprehensive program in pharmaceutics has specialists in drug development and delivery who use and deliver treatments. Their goal is to better understand how the chemical and physical properties of drugs and their dosage forms affect many approaches to create drug performance in healthy and diseased systems. Graduate students may elect a program concentrating in:

- Novel drug delivery systems
- Biopharmaceutics and pharmacokinetics
- Physical pharmacy and polymeric dosage form development
- Drug metabolism

With a strong focus on nanotechnology-based advanced delivery systems that address contemporary needs, this concentration also gives you the opportunity to study with some of the world's top researchers. Pharmaceutics students have the option of performing industrial internships during the summer in some of the most prestigious pharmaceutical and biotechnology companies in the area.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Required Core		
Complete 13–18 semester hours from the following:		13–18
PHSC 5100	Concepts in Pharmaceutical Science	2
PHSC 5102	Concepts in Pharmaceutical Science 2	2
PHSC 5300	Pharmaceutical Biochemistry	2
or PHSC 7010	Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	2
PHSC 6212	Research Skills and Ethics	1
or BIOL 6381	Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	2
PHSC 6216	Human Physiology and Pathophysiology	2
Pharmaceutics		
PMST 6250	Advanced Physical Pharmacy	2
PMST 6252	Pharmacokinetics and Drug Metabolism	3
PMST 6254	Advanced Drug Delivery System	3

Electives

Code	Title	Hours
Complete 7–12 semester hours from the following subject areas:		7–12
BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		

Program Credit/GPA Requirements

33 total semester hours required

Minimum 3.000 GPA required

Pharmacology, MS

Graduate education in pharmacology embodies the principles and mechanisms of drug action on biological systems. Through course work, seminars, and conferences, students gain exposure to both classical and recent approaches that have led to the development of current theories of drug action. Pharmacology should not be confused with pharmacy, which is a professional degree allowing a licensed individual to dispense drugs.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in each course.

Code	Title	Hours
Required Core		
Complete 13–18 semester hours from the following:		13–18
PHSC 5100	Concepts in Pharmaceutical Science	
PHSC 5102	Concepts in Pharmaceutical Science 2	
PHSC 5300	Pharmaceutical Biochemistry	

or PHSC 7010	Pharmaceutical Sciences Laboratory	
PHSC 5310	Cellular Physiology	
PHSC 6212	Research Skills and Ethics	
or BIOL 6381	Ethics in Biological Research	
PHSC 6214	Experimental Design and Biostatistics	
PHSC 6216	Human Physiology and Pathophysiology	

Pharmacology		
PMCL 6260	Pharmacology 1	2
PMCL 6261	Pharmacology 2	2
PMCL 6262	Receptor Pharmacology	2

Electives

Code	Title	Hours
Complete 9–14 semester hours from the following subject areas:		9-14
BIOL, BIOT, CHEM, NNMD, PHSC, PMCL, PMST		

Program Credit/GPA Requirements

33 total semester hours required
 Minimum 3.000 GPA required

Pharmacy and Public Health, PharmD/MPH

The School of Pharmacy and the Department of Health Sciences offer a combined Doctor of Pharmacy (PharmD) and Master in Public Health (MPH) program.

The combined PharmD/MPH program recognizes and reinforces the importance of public health in pharmacy practice. Central to addressing urban public health concerns, and in particular those associated with racial and ethnic health disparities, the program is committed to building a strong, diverse, and activist public health workforce. The goal of the program is to graduate professionals who are well educated in the complex issues associated with disparate health status and healthcare access. The combined PharmD/MPH program allows qualified and interested students an opportunity to achieve their goal of obtaining a more robust understanding of public health through an MPH degree while also completing their PharmD.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

DOCTOR OF PHARMACY REQUIREMENTS

Code	Title	Hours
Required Core		
PHMD 2350	Healthcare Systems	3
PHMD 5223	Evidence-Based Medicine	2
PHMD 5250	Pharmacy Care Management	3
PHMD 5330	Jurisprudence	3
Pharmaceutics		
PHSC 2330	Immunology	3
PHSC 3411	Pharmaceutics 1	4
PHSC 3412	Pharmaceutics 2	4
PHSC 3419	Pharmaceutics Laboratory	1
PHSC 3430	Pharmacokinetics and Biopharmaceutics	3

PHSC 5360	Anti-Infectives	4
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Pharmacology/Medicinal Chemistry

PHSC 4501	Pharmacology/Medicinal Chemistry 1	5
PHSC 4502	Pharmacology/Medicinal Chemistry 2	5

Disease Management

PHMD 4611	Comprehensive Disease Management 1	6
PHMD 4612	Comprehensive Disease Management 1 Seminar	1
PHMD 4621	Comprehensive Disease Management 2	6
PHMD 4622	Comprehensive Disease Management 2 Seminar	1
PHMD 4623	Comprehensive Disease Management 2 Skills Lab	0.5
PHMD 4631	Comprehensive Disease Management 3	6
PHMD 4632	Comprehensive Disease Management 3 Seminar	1
PHMD 4633	Comprehensive Disease Management 3 Skills Lab	0.5
PHMD 4641	Comprehensive Disease Management 4	6
PHMD 4642	Comprehensive Disease Management 4 Seminar	1
PHMD 4643	Comprehensive Disease Management 4 Skills Lab	0.5

Practice

PHMD 1201	Introduction to Pharmacy Practice	2.5
PHMD 1202	Lab for PHMD 1201	0.5
PHMD 2310	Educational and Behavioral Interventions in Pharmacy Practice	2
PHMD 2311	Lab for PHMD 2310	0.5
PHMD 5270	Economic Evaluation of Pharmaceuticals and Pharmacy Practice	2
PHMD 5450	Advanced Pharmacy Practice Experience Preparatory Seminar	1

Required Practice Experience

Complete 36 semester hours of required practice experience:	36
PHMD 6440-PHMD 6474	

MASTER OF PUBLIC HEALTH REQUIREMENTS

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		

PHTH 6910	Public Health Capstone	3
Electives		
Complete 9 semester hours in the following subject area:		9
PHTH or approved electives in other subject areas		

Program Credit/GPA Requirements

156 total semester hours required
Minimum 3.000 GPA required

Physical Therapy, Movement, and Rehabilitation Sciences

Website (<http://www.northeastern.edu/bouve/pt>)

Kristin Curry Greenwood, PT, DPT, EdD, MS
Associate Clinical Professor and Interim Chair

Ann C. Golub-Victor, PT, DPT, MPH
Clinical Professor and Interim Associate Chair

301 Robinson Hall
617.373.3908
617.373.3161 (fax)
physicaltherapy@northeastern.edu

Our programs build on the university's core values of interdisciplinary education, urban engagement, international knowledge, and cutting-edge research. Our exceptional faculty are dedicated to promoting excellence in practice, education, scholarship, and community service. Faculty are engaged in active clinical research and practice. A hallmark of our program is the integration of experiential learning and didactic education whether through use of standardized patients, communication and interaction with community consultants, participation in service-learning, or engagement in research with our faculty.

The Department of Physical Therapy, Movement, and Rehabilitation Sciences graduates are innovative, global leaders who excel in clinical practice, research, worker wellness, ergonomics, disability studies, and community service. With one of the longest accredited physical therapy programs in the United States, and the only program with cooperative education, Northeastern University seeks to graduate students with exceptional clinical decision-making skills and experience in the field of physical therapy. Our Master in Occupational Ergonomics and Health program, open to individuals with various backgrounds, is a unique program combining health promotion and disease prevention. We also offer Certificates of Graduate Studies in the areas of disability studies and ergonomics for both licensed physical therapists and for those with nonclinical backgrounds. The Sports Physical Therapy Clinical Residency program is for licensed practicing physical therapists. Our degree programs incorporate cooperative education, a hallmark of Northeastern University.

Unique Program Features

INTERPROFESSIONAL OPPORTUNITIES

The Bouvé van provides community access to healthcare offered in conjunction with the nursing, pharmacy, speech-language pathology, and public health programs. The Arnold S. Goldstein Laboratory Suite is the keystone of our interprofessional simulation-learning program. Simulations are uniquely designed to engage Bouvé students from more than eight different health professions to learn about, from, and with each other to improve health outcomes. Labs can be set up as a variety of practice environments, including hospital rooms, operating rooms, exam rooms, office space, conference rooms, home care settings, or even a dorm room.

GLOBAL

Beyond the traditional semester abroad, we offer multiple global academic and service-oriented experiences such as international cooperative education and clinical experience, PT academic exchange programs, and global service PT projects to Mexico and Ecuador.

RESEARCH OPPORTUNITIES

The Department of Physical Therapy, Movement, and Rehabilitation Sciences' research mission is to build the evidence for best practices to maintain and improve the health and well-being of the local, national, and global community members. Students have the opportunity to work with faculty to conduct ongoing research in one of the 10 Department of Physical Therapy, Movement, and Rehabilitation Science's labs and centers; including:

- Neuromotor Systems Laboratory
- Laboratory for Locomotion Research
- The ReGameVR Laboratory
- Movement Neuroscience Laboratory
- Rehabilitation and Epidemiology Trainee Program
- Occupational Biomechanics and Ergonomics Laboratory
- Neurophysiology Laboratory
- Teaching and Learning Innovation Laboratory
- Cadaver Lab
- Neuroscience Wet Lab

Programs

Doctor of Physical Therapy (DPT)

- Physical Therapy (p. 278)
- Physical Therapy—Postbaccalaureate Entry (p. 279)
- Transitional Doctor of Physical Therapy (p. 311)

Master of Science (MS)

- Occupational Ergonomics and Health (p. 281)

Graduate Certificate

- Advanced Study in Orthopedics (p. 354)
- Early Intervention (p. 245)
- Occupational Ergonomics and Health (p. 282)

Physical Therapy, DPT

Students who complete their bachelor's degree in rehabilitation sciences at Northeastern automatically matriculate into the final graduate year (year 6) of the Doctorate of Physical Therapy curriculum. Please refer to the undergraduate Physical Therapy program (<http://catalog.northeastern.edu/undergraduate/health-sciences/physical-therapy-movement-rehabilitation/dpt>) for a complete description of the curriculum and program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C or higher is required in all courses.

Code	Title	Hours
Required Core		
PT 6215 and PT 6216	Assistive Technology and Lab for PT 6215	4
PT 6251	Diagnostic Imaging	3
Advanced Topics		
Complete 2 semester hours from the following range: PT 6231 to PT 6237		2
Clinical		
PT 6250	Clinical Integration 2: Evidence and Practice	2
PT 6441	Clinical Education 1	6
PT 6442	Clinical Education 2	6
PT 6448	Clinical Education 3	9

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Year 1							
Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PT 6251	3	PT 6448	9	PT 6441	6	PT 6215 and PT 6216	4
PT 6442	6					PT 6250	2
						Complete 2 semester hours from the following range: PT 6231 to PT 6237	2
	9		9		6		8

Total Hours: 32

Physical Therapy, DPT– Postbaccalaureate Entry

Sonya Larrieux, PT, MA, PhD, C/NDT
Director, DPT Graduate Affairs

Diane Fitzpatrick, PT, DPT, MS, CEEAA
Associate Director, Student Affairs

301 Robinson Hall
617.373.3908
617.373.3161 (fax)
PB_DPT_INQUIRIES@northeastern.edu

Our Postbaccalaureate Doctor of Physical Therapy (DPT) program (<http://www.northeastern.edu/bouve/pt/programs/pbdpt.html>) is designed for individuals who hold a minimum of a baccalaureate degree in any major other than physical therapy and have satisfied the prerequisite requirements. Over the course of three and one-half years, this rigorous curriculum provides didactic and experiential learning experiences, the cornerstone of our program. These experiences include cooperative education, simulated patient interactions, engagement with consumer clients, service-learning, clinical research, and clinical education experiences.

Emphasis on Experiential Learning

COOPERATIVE EDUCATION

Our DPT program provides students with six months of full-time experiential learning in addition to the required clinical affiliations necessary for licensure. Through cooperative education, the hallmark of Northeastern University, students are able to integrate semesters of academic study with semesters of cooperative education experiences in hospitals and clinics throughout the country and around the globe. Students may be employed as physical therapy co-ops with increasing responsibilities commensurate with their academic studies or perform other health-related duties.

CLINICAL EDUCATION

The curriculum also includes three rotations for a total of 36 weeks of clinical education under the direct supervision of a licensed physical therapist. We are affiliated with world-class medical centers and clinical sites throughout the United States, providing students with access to master clinicians and clinical scholars. Every effort is made to accommodate individual circumstances, but students should be prepared to travel out of state for two of the three clinical placements. Availability of a car may be required, as most sites are not accessible by public transportation. All expenses associated with clinical education, including travel and housing, are the responsibility of the student.

GLOBAL OUTREACH

Students may participate in short cultural immersion experiences abroad whereby they engage in community service projects under the direction of a physical therapy faculty member or on physical therapy academic exchanges with partner academic institutions.

SERVICE-LEARNING

During the curriculum, students participate in service-learning opportunities in the local community in which they learn and apply skills and knowledge related to program objectives. These opportunities start during the first academic year and continue throughout the program in a variety of settings.

ABILITY TO CONCENTRATE

Once in the program, students may have the ability to acquire additional information in two areas of concentration. The **Certificate in Early Intervention** (p. 246) is an interprofessional program that meets the state and national requirements for personnel to work with families, infants and toddlers with disabilities, or those who are at risk for developmental delays. The **Sports Performance Concentration** seeks to prepare the physical therapy student to confidently pursue a sports physical therapy position working with athletes of all ages in a variety of settings. In both areas, students take additional course work and conduct focused research and clinical rotations that expand upon the entry-level physical therapy curriculum.

STUDENT RESEARCH

Physical therapy students participate in research that is integrated into the curriculum. Students have the opportunity to work with faculty to conduct ongoing research in world-renowned medical centers, in one of the 10 Department of Physical Therapy, Movement, and Rehabilitation Science's labs and centers (e.g., Neuromotor Systems Lab, Lab for Locomotion Research, The ReGameVR Lab, Movement Neuroscience Lab, Rehabilitation and Epidemiology Trainee Program, Occupational Biomechanics and Ergonomics Lab, Neurophysiology Lab, Teaching and Learning Innovation Lab, Cadaver Lab, and Neuroscience Wet Lab). The successful outcome is the ability to conduct and present quality research at local and/or national-level conferences.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C or higher is required in all courses.

Code	Title	Hours
Required Core		
HLTH 5450 and HLTH 5451	Healthcare Research and Recitation for HLTH 5450	4
PT 5101 and PT 5102	Foundations of Physical Therapy and Lab for PT 5101	4
PT 5145	Introduction to the Healthcare System	2
PT 5160 and PT 5161	Psychosocial Aspects of Healthcare and Psychosocial Aspects of Healthcare Seminar	4
PT 5450 and PT 5504	Introduction to Therapeutic Activities and Lab for PT 5503	3
PT 6215 and PT 6216	Assistive Technology and Lab for PT 6215	4
PT 6243 and PT 6244	Health Education, Promotion, and Wellness and Recitation for PT 6243	3
Medicine and Management		
PT 5140 and PT 5141	Pathology and Recitation for PT 5140	4
PT 5230	Pediatric and Geriatric Aspects of Life Span Management	3
PT 5503 and PT 5504	Cardiovascular and Pulmonary Management and Lab for PT 5503	5
PT 5500	Pharmacology for Physical Therapy	2
PT 6000	Leadership, Administration, and Management	2
PT 6241	Screening for Medical Conditions in Physical Therapy Practice	4
Anatomy and Physiology		
PT 5131 and PT 5132	Gross Anatomy and Lab for PT 5131	5
PT 5133 and PT 5134	Kinesiology and Lab for PT 5133	4
PT 5515 and PT 5516	Integumentary Systems and Advanced Modalities and Lab for PT 5515	3
PT 5505 and PT 5506	Musculoskeletal Management 1 and Lab for PT 5505	5
PT 6223 and PT 6224	Musculoskeletal Management 2 and Lab for PT 6223	5
Neurology		
PT 5138 and PT 5139	Neuroscience and Lab for PT 5138	5
PT 5150 and PT 5151	Motor Control, Development, and Learning and Lab for PT 5150	5
PT 5209 and PT 5210	Neurological Rehabilitation 1 and Lab for PT 5209	5

PT 6221 and PT 6222	Neurological Rehabilitation 2 and Lab for PT 6221	5
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Co-op

PT 5111	Professional Development for Bouvé Graduate Co-op	1
PT 6964	Co-op Work Experience (taken two semesters)	0

Seminar and Advanced Topics

PT 5226	Physical Therapy Professional Seminar 2	2
Complete 2 semester hours in the following range:		2
PT 6231 to PT 6237		

Project

PT 5227	Physical Therapy Project 1	3
PT 5229	Physical Therapy Project 2	2

Clinical

PT 5540	Clinical Integration 1: Evidence and Practice	2
PT 6250	Clinical Integration 2: Evidence and Practice	2
PT 6251	Diagnostic Imaging	3
PT 6441	Clinical Education 1	6
PT 6442	Clinical Education 2	6
PT 6448	Clinical Education 3	9

Optional Concentration

A grade of C or higher is required in all courses.

Code	Title	Hours
Sports Performance Concentration		
PT 5227	Physical Therapy Project 1	3
PT 5229	Physical Therapy Project 2	2
PT 5165	Sports Medicine: Managing the Injured Athlete	4
PT 6237	Advanced Special Topics in Physical Therapy	2
PT 6448 or PT 6442	Clinical Education 3 or Clinical Education 2	9

Program Credit/GPA Requirements

123 total semester hours required

Minimum 3.000 GPA required

Plan of Study

Year 1

	Spring	Hours	Summer	Hours
			Full Semester	
	HLTH 5450 and HLTH 5451	4	PT 5133 and PT 5134	4
	PT 5101 and PT 5102	4	PT 513E and PT 513E	5
	PT 5131 and PT 5132	5	PT 5140 and PT 5141	4

PT 516C and PT 5161	4		PT 550C	2
	17			15

Year 2

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PT 5111	1	PT 6964	0	PT 6964	0	PT 5515 and PT 5516	3
PT 514E	2					PT 554C	2
PT 5150 and PT 5151	5					PT 6243 and PT 6244	3
PT 545C and PT 5504	3						
PT 5503 and PT 5504	5						
	16		0		0		8

Year 3

Fall	Hours	Spring	Hours	Summer 1	Hours	Summer 2	Hours
PT 5209 and PT 5210	5	PT 5226	2	PT 6441	6	PT 6215 and PT 6216	4
PT 5227	3	PT 522E	2			PT 625C	2
PT 5505 and PT 5506	5	PT 5230	3			Complete 2 semester hours in the following range:	2
PT 600C	2	PT 6221 and PT 6222	5			PT 6231 to PT 6237	
PT 6241	4	PT 6223 and PT 6224	5				
	19		17		6		8

Year 4

Fall	Hours	Spring	Hours
PT 6251	3	PT 6448	9
PT 6442	6		
	9		9

Total Hours: 124

Occupational Ergonomics and Health, MS

Lauren A. Murphy, PhD
Assistant Clinical Professor and Graduate Program Director

301 Robinson Hall
617.373.4504
617.373.3161 (fax)
ergonomics@northeastern.edu

Occupational ergonomics and health programs are increasingly important due to the large burden of work-related musculoskeletal disorders (MSDs) and the increased incidence of chronic health conditions of the workforce. These initiatives are especially important with the increase in the aging workforce with their higher incidence of chronic health disorders and the increasing young population entering the workforce with preexisting chronic health issues. In the United States alone, the conservative estimates of direct costs for work-related MSDs are in the magnitude of \$50 billion per year. Combined with estimates of indirect costs, these estimates reach \$200 billion per year.

The focus of the Master of Science in Occupational Ergonomics and Health program is on primary and secondary prevention approaches for work-related MSDs and injuries. Worker health promotion approaches include workstation configuration and design; modifying work tasks; training workers, supervisors, and caregivers; as well as creating ergonomics management systems, organizational policies and practices, work site wellness programs, and Total Worker Health® efforts.

This master of science program will provide interprofessional training that integrates traditional health protection (ergonomics and safety) and health promotion (wellness) to increase the effectiveness of such workplace programs. Graduates from this unique master's degree program in the United States will be well suited for jobs in industry requiring integration of health and safety programs, thereby fulfilling a need to have well-trained professionals in this domain.

Students who complete the program should be able to:

- Describe the scope and types of workplace programs for ergonomics and health
- Compare fundamental ergonomics approaches to the prevention of work-related injuries, MSDs, and disability
- Develop and administer integrative and innovative approaches to workplace health promotion and wellness programs
- Work collaboratively as part of an interprofessional team
- Analyze factors in the work environment that affect safety and pose risks to workers
- Create worker safety and health prevention programs and apply theory and evidence to support the development of workplace safety and wellness programs

Program Description

The master's degree program requires 36 semester hours divided into 32 semester hours for courses and a 4-semester-hour capstone project. The program can be completed within a year for full-time students and within three years for part-time students. The program is offered in a hybrid format utilizing both online/distance classes when available along with on-campus classroom experiences. Some classes will be fully on-site and the rest will be hybrid (some on-site/online) and others fully online to allow schedule flexibility.

Graduate Student Research

Graduate research opportunities are integrated into the curriculum. Students also have the opportunity to work with faculty to conduct ongoing research in world-renowned companies and in one of the twelve Department of Physical Therapy, Movement, and Rehabilitation Science's labs and centers (e.g., Neuromotor Systems Lab, Lab for Locomotion Research, Cancer Survivorship Center, the ReGameVR Lab, Movement Neuroscience Lab, Rehabilitation and Epidemiology Trainee Program, Occupational Biomechanics and Ergonomics Lab, Neurophysiology Lab, Teaching and Learning Innovation Lab, Musculoskeletal Epidemiology and Biomechanics Lab, Cadaver Lab, and Neuroscience Wet Lab).

Progression in the Program

To progress in the program, students must maintain acceptable standards of scholarship and academic performance as stated in the academic requirements section of this catalog. Students must develop professional behaviors and emotional maturity.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	3
PHTH 5214	Environmental Health	3
PT 5600	Ergonomics and the Work Environment	3
PT 5610	Workplace Wellness and Health Promotion	3
PT 6978	Independent Study	4
Research		
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3

Electives

Code	Title	Hours
Complete five of the following:		13-14
CAEP 6203	Understanding Culture and Diversity	
CAEP 6220	Development Across the Life Span	
IE 7315	Human Factors Engineering	
PHTH 5224	Social Epidemiology	
PHTH 5228	Advances in Measuring Behavior	
PHTH 6320	Qualitative Methods in Health and Illness	
PT 6243	Health Education, Promotion, and Wellness	
SOCL 7270	Sociology of Work and Employment	

Program Credit/GPA Requirements

36 total semester hours required
Minimum 3.000 GPA required

Occupational Ergonomics and Health, Graduate Certificate

Lauren A. Murphy, PhD

Assistant Clinical Professor and Graduate Program Director

301 Robinson Hall
617.373.4504
617.373.3161 (fax)
ergonomics@northeastern.edu

The occupational ergonomics and health graduate certificate focuses on approaches that promote worker well-being and prevent work-related musculoskeletal disorders (MSDs) and injuries. What makes this certificate unique is the emphasis on not just physical ergonomic factors, like the design of tools and equipment, but also the importance of organizational ergonomic factors, like policies, communication, and teamwork. This is important because the management of workplace

ergonomics and health programs requires a multidisciplinary set of skills based on understanding the interaction of the work environment, including the physical and organizational factors.

The workplace of the 21st century demands an interprofessional approach that reaches across organizational boundaries, making health and safety a uniform and consistent value within the organization to effectively impact worker health. Add to your professional experience by specializing in workplace approaches that integrate health and safety programs.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in each course.

Code	Title	Hours
PT 5600	Ergonomics and the Work Environment	3
PT 5610	Workplace Wellness and Health Promotion	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3

Elective

Code	Title	Hours
Complete 3 semester hours from the following:		3
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
PHTH 5214	Environmental Health	

Program Credit/GPA Requirements

15 total semester hours required
Minimum 3.000 GPA required

Physician Assistant

Website (<http://www.northeastern.edu/bouve/pa>)

Trenton Honda, PhD, MMS, PA-C

Assistant Clinical Professor and Program Director

202 Robinson Hall
617.373.3195
617.373.3338 (fax)
paprogram@northeastern.edu

Established in 1971, the physician assistant (PA) program has a long-standing history of, and expertise in, the education and training of physician assistants. The PA program is located in close proximity to Boston's major academic medical centers and was the first generalist PA training program in the nation to offer a master's degree in 1985.

This rigorous, highly integrated curriculum offers our students the opportunity to obtain broad generalist training that prepares them for successful employment in all fields of clinical practice. Our instructional faculty members are practicing clinicians from throughout New England, and most have been teaching with the program for many years. The clinical year is designed to provide students with experience in diverse healthcare settings in our well-established network of clinical rotation sites.

Northeastern's PA program graduates are employed in positions across the United States, and some have worked internationally. In addition to clinical practice, our graduates are employed in research, administration, and education.

Programs

Master of Science (MS)

- Physician Assistant Studies (p. 283)

Dual Degree

- Physician Assistant Studies and Health Informatics, MS/MS (p. 283)
- Physician Assistant Studies and Public Health, MS/MPH (p. 252)

Graduate Certificate

- Physician Assistant Leadership and Management (p. 285)

Physician Assistant Studies, MS

Physician assistants (PAs) are healthcare providers who practice medicine with physician supervision. They are highly sought after members of the healthcare team who provide diagnostic and therapeutic patient care. The physician assistant studies (MS) program is a full-time, two-year graduate program that provides an opportunity to earn a Master of Science in Physician Assistant Studies.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C or higher is required in each course.

Code	Title	Hours
Required Core		
PA 6208	Professional Issues for Physician Assistants	2
PA 6326	Aspects of Primary Care	4
PA 6327	Emergency Medicine and Critical Care	2
PA 6328	Aging and Rehabilitation Medicine	2
PA 6329	Healthcare Delivery	2
PA 6330	Research Design	2
Anatomy & Physiology		
PA 6200	Anatomy and Physiology 1	3
PA 6201	Anatomy and Physiology 2	3
Diagnosis & Evaluation		
PA 6203	Physical Diagnosis and Patient Evaluation 1	3
PA 6204	Physical Diagnosis and Patient Evaluation 2	3
Pharmacology		
PA 6205	Pharmacology 1	2
PA 6206	Pharmacology 2	2
PA 6207	Clinical Laboratory and Diagnostic Methods	4
Principles		
PA 6311	Principles of Medicine 1	4
PA 6312	Principles of Medicine 2	4
PA 6313	Principles of Medicine 3	4

PA 6320	Principles of Obstetrics and Gynecology	2
PA 6321	Principles of Surgery	2
PA 6322	Principles of Orthopedics	2
PA 6323	Clinical Neurology	2
PA 6324	Principles of Pediatrics	2
PA 6325	Principles of Psychiatry	2
Clinical		
PA 6400	Applied Study in Medicine	5
PA 6401	Applied Study in Ambulatory Medicine	5
PA 6402	Applied Study in Family Practice	5
PA 6403	Applied Study in Emergency Medicine	5
PA 6404	Applied Study in Obstetrics and Gynecology	5
PA 6405	Applied Study in Pediatrics	5
PA 6406	Applied Study in Surgery	5
PA 6407	Applied Study in Mental Health	5
PA 6408	Applied Study Elective	5

Program Credit/GPA Requirements

103 total semester hours required

Minimum 3.000 GPA required

Physician Assistant Studies and Health Informatics, MS/MS

The Northeastern University health informatics and physician assistant combined program allows qualified and interested students to achieve their goal of obtaining a more robust understanding of healthcare technology while also completing robust clinical training in the physician assistant program. This prepares a select group of exceptionally qualified clinicians to become leaders in healthcare technology application and development and fosters interdisciplinary collaboration in order to address problems in the healthcare and health information environments both locally and across the globe. The joint program is designed to provide students a greater understanding of technological issues in clinical practice, quantitative methods, and the use of scientific evidence and cutting-edge technology to optimize clinical workflows and improve patient outcomes.

This dual degree takes 34 months to complete (as opposed to 48, if each degree were pursued separately), and a total number of 8 credits are shared between both degrees.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Physician Assistant Requirements

A grade of C or higher is required in each course.

Code	Title	Hours
Required Core		
PA 6208	Professional Issues for Physician Assistants	2
PA 6326	Aspects of Primary Care	4
PA 6327	Emergency Medicine and Critical Care	2
PA 6328	Aging and Rehabilitation Medicine	2
PA 6329	Healthcare Delivery	2
Anatomy & Physiology		
PA 6200	Anatomy and Physiology 1	3

PA 6201	Anatomy and Physiology 2	3
Diagnosis & Evaluation		
PA 6203	Physical Diagnosis and Patient Evaluation 1	3
PA 6204	Physical Diagnosis and Patient Evaluation 2	3
Pharmacology		
PA 6205	Pharmacology 1	2
PA 6206	Pharmacology 2	2
PA 6207	Clinical Laboratory and Diagnostic Methods	4
Principles		
PA 6311	Principles of Medicine 1	4
PA 6312	Principles of Medicine 2	4
PA 6313	Principles of Medicine 3	4
PA 6320	Principles of Obstetrics and Gynecology	2
PA 6321	Principles of Surgery	2
PA 6322	Principles of Orthopedics	2
PA 6323	Clinical Neurology	2
PA 6324	Principles of Pediatrics	2
PA 6325	Principles of Psychiatry	2
Clinical		
PA 6400	Applied Study in Medicine	5
PA 6401	Applied Study in Ambulatory Medicine	5
PA 6402	Applied Study in Family Practice	5
PA 6403	Applied Study in Emergency Medicine	5
PA 6404	Applied Study in Obstetrics and Gynecology	5
PA 6405	Applied Study in Pediatrics	5
PA 6406	Applied Study in Surgery	5
PA 6407	Applied Study in Mental Health	5
PA 6408	Applied Study Elective	5

Health Informatics Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
HINF 7701	Health Informatics Capstone Project	3
Business Management		
Complete two courses from the following:		6
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
HINF 6240	Improving the Patient Experience through Informatics	
HINF 6335	Management Issues in Healthcare Information Technology	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two courses from the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	

HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
Electives		
Complete two courses from the following:		6
HINF 6345	Design for Usability in Healthcare	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

128 total semester hours required

Minimum 3.000 GPA required

Physician Assistant Studies and Public Health, MS/MPH

The Northeastern University Physician Assistant (PA) program and Department of Health Sciences offer a combined Master of Science in Physician Assistant Studies (MS)/Master in Public Health Program (MPH) program. The combined PA/MPH program allows qualified and interested students an opportunity to achieve their goal of obtaining a more robust understanding of public health through an MPH degree while also completing their Master of Science in Physician Assistant Studies.

Since its inception in 2008, the Northeastern MPH program has distinguished itself from other MPH programs in the area through its unique focus on urban public health. The program's overarching goal is to address urban public health concerns, particularly those associated with racial and ethnic health disparities, in order to build a diverse and activist-oriented public health workforce. The MPH program has a strong commitment to providing a flexible course of study for working professionals. This flexibility allows for easy incorporation into a dual-degree program.

The combined degree that incorporates both programs is designed to help diversify the public health workforce and improve graduates' ability to approach clinical situations with cultural sensitivity and awareness. Successful graduates of the program benefit from having a greater understanding of public health issues in clinical practice, including the racial and ethnic health disparities prevalent in the U.S. healthcare system, as well as a strong grounding in epidemiology, quantitative and qualitative research methods, and the use of scientific evidence, skills critical to many fields of healthcare practice.

This dual degree takes a total of three years to complete (as opposed to four, if each degree were pursued separately), and a total number of 12 credits are shared between both degrees.

For more information, including the application and admissions process, please visit the PA/MPH website here (<https://bouve.northeastern.edu/health-sciences/programs/pa-mph>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Physician Assistant Requirements

A grade of C or higher is required in each course.

Code	Title	Hours
Required Core		
PA 6208	Professional Issues for Physician Assistants	2
PA 6326	Aspects of Primary Care	4
PA 6327	Emergency Medicine and Critical Care	2
PA 6328	Aging and Rehabilitation Medicine	2
Anatomy & Physiology		
PA 6200	Anatomy and Physiology 1	3
PA 6201	Anatomy and Physiology 2	3
Diagnosis & Evaluation		
PA 6203	Physical Diagnosis and Patient Evaluation 1	3
PA 6204	Physical Diagnosis and Patient Evaluation 2	3
PA 6207	Clinical Laboratory and Diagnostic Methods	4
PA 6323	Clinical Neurology	2
Pharmacology		
PA 6205	Pharmacology 1	2
PA 6206	Pharmacology 2	2
Principles		
PA 6311	Principles of Medicine 1	4
PA 6312	Principles of Medicine 2	4
PA 6313	Principles of Medicine 3	4
PA 6320	Principles of Obstetrics and Gynecology	2
PA 6321	Principles of Surgery	2
PA 6322	Principles of Orthopedics	2
PA 6324	Principles of Pediatrics	2
PA 6325	Principles of Psychiatry	2
Clinical		
PA 6400	Applied Study in Medicine	5
PA 6401	Applied Study in Ambulatory Medicine	5
PA 6402	Applied Study in Family Practice	5
PA 6403	Applied Study in Emergency Medicine	5
PA 6404	Applied Study in Obstetrics and Gynecology	5
PA 6405	Applied Study in Pediatrics	5
PA 6406	Applied Study in Surgery	5
PA 6407	Applied Study in Mental Health	5

Master's of Public Health Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5232	Evaluating Healthcare Quality	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3
Elective		
Complete 3 semester hours of approved elective course work.		3

Program Credit/GPA Requirements

133 total semester hours required
Minimum 3.000 GPA required

Physician Assistant Leadership and Management, Graduate Certificate

The Northeastern University Physician Assistant (PA) Program and the American Academy of Physician Assistants' Center for Healthcare Leadership and Management jointly sponsor the Graduate Certificate in PA Leadership and Management. The certificate seeks to prepare qualified and interested students to achieve their goal of obtaining a robust understanding of the theory, techniques, and implementation of leadership and management skills essential in the practice and administration of medicine in today's healthcare environment. The curriculum is designed to support PAs and those managing PAs with the necessary skills and competencies to expand their roles in the clinical arena and/or increase their familiarity with and training in leadership/management in order to advance their careers in healthcare administration.

The certificate can be completed in one year and requires a total of 12 credits.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
PA 5100	Principles of Leadership in Healthcare	3
PA 5101	Advocacy in Leadership	3
PA 5102	Medical Billing and Reimbursement for Advanced Practice Providers	3

PA 5103	Metrics: Measuring, Comparing, and Privileging Your PA and NP Workforce	3
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Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Interdisciplinary

Website (<http://www.northeastern.edu/bouve/interdisciplinary>)

Daniel A. Feinberg, EdD, MBA

Assistant Clinical Instructor and Program Director, Health Informatics Program

Health Informatics Program
248 West Village H
617.373.5005 (fax)

Daniel A. Feinberg, Assistant Clinical Instructor and Program Director,
d.feinberg@northeastern.edu

Stephen Intille, PhD

Associate Professor and Program Director, Personal Health Informatics Program

Personal Health Informatics Program
974 West Village H
617.373.3711

Stephen Intille, Associate Professor and Program Director,
s.intille@northeastern.edu

With Northeastern University's interdisciplinary graduate programs in health informatics, you have an opportunity to gain the knowledge and skills needed to use information technology to improve healthcare delivery and outcomes—and to advance your career in a growing field. We seek to educate the leaders who use technology to improve healthcare for the future.

Programs

Doctor of Philosophy (PhD)

- Personal Health Informatics (p. 286)

Master of Science (MS)

- Biotechnology (p. 286)
- Health Data Analytics (p. 105)
- Health Informatics (p. 112)

Dual Degree

- Physician Assistant Studies and Health Informatics, MS/MS (p. 283)
- Public Health and Health Informatics, MPH/MS (p. 254)

Graduate Certificate

- Biopharmaceutical Analytical Sciences (p. 293)
- Early Intervention (p. 245)
- Health Informatics Management and Exchange (p. 294)
- Health Informatics Privacy and Security (p. 294)
- Health Informatics Software Engineering (p. 294)

Personal Health Informatics, PhD

Northeastern University's interdisciplinary doctoral program in personal health informatics seeks to prepare researchers to design and evaluate technologies that improve health and wellness with the potential to transform healthcare. The joint degree program combines a strong curriculum in human-computer interface technology and experimental design in health sciences. Read additional information (p. 109).

Biotechnology, MS

Overview

Northeastern's Master of Science in Biotechnology is a professional master's program, an innovative, nonthesis graduate degree. It combines advanced interdisciplinary training in biotechnology, biology, chemistry, and pharmaceutical sciences with the development of high-value business skills critical to success in today's dynamic workplace. Graduates are prepared to innovate, collaborate, and lead as research, managerial, or technical professionals in a wide range of biotechnology specialties.

Molecular Biotechnology Concentration

The molecular biotechnology concentration provides students with didactic and practical knowledge in molecular biotechnology, protein expression, and structural biology. Students learn how to generate and optimize molecular forms used to express recombinant proteins to be used as biopharmaceuticals. Particular attention is paid to cutting-edge technologies such as RNAi and CRISPR/CAS9. In addition, the students learn how to purify biopharmaceuticals and analyze aggregation and how to prevent it.

Process Sciences Concentration

The process sciences concentration focuses on the production of drug substance of biopharmaceuticals from cell culture process to purification of the biologic molecules. The students learn the principles of development and implementation of biological manufacturing processes through the integration of concepts and fundamentals of engineering and life sciences. The concentration addresses biochemical engineering, mammalian cell culture process development, and protein purification. The learning of the students is reinforced by both lecture courses and project-driven laboratory experience that provides hands-on learning of cell culture and protein separation.

Biopharmaceutical Analytical Sciences Concentration

The biopharmaceutical analytical sciences concentration focuses on structures and activities of biological molecules and their variants formed during the production of biopharmaceuticals. Students learn the diversity of molecular forms derived from the biological products through various biological and chemical mechanisms and the impact of these structural changes on the safety and efficacy of these biopharmaceuticals. The students learn the science and practice applied in the biotechnology industry to analyze and characterize these molecular forms. This is accomplished through both lecture courses of the analytical sciences and project-driven laboratory experience that utilizes analytical techniques such as mass spectrometry and molecular separations.

Pharmaceutical Technologies Concentration

The pharmaceutical technologies concentration focuses on the conversion of purified proteins to biopharmaceutical drug products that are compatible for clinical use. This concentration addresses the design of the product formulation and the development and implementation of the drug product manufacturing processes. Students learn the sciences

of the interactions of the biologic molecules in the process conditions and the relevant process technology, such as aseptic operations and freeze-drying, needed for drug product manufacturing. This is accomplished through both lecture courses and project-driven laboratory experience that offers hands-on learning of formulation design and drug product process development.

Biotechnology Scientific Information Management Concentration

The scientific information management concentration focuses on the collection, analysis, and visualization of scientific data. This concentration addresses the issues surrounding *big data* that face industry today. Students have an opportunity to learn how to manage, store, visualize, and provide overall analysis of large scientific data sets. This is accomplished through both lecture courses and project-driven laboratory experience that provide hands-on learning of the impacts of data on the scientific process.

Biotechnology Regulatory Science Concentration

The regulatory science concentration focuses on the science behind good regulatory practice today. This concentration addresses the issues surrounding current and innovative science practices that influence regulatory decisions. Students have an opportunity to learn the science behind compliance. This is accomplished through both lecture courses and project-driven laboratory experience that provides hands-on learning of the science behind dossier analysis.

Biotechnology Enterprise Concentration

The biotechnology enterprise concentration integrates business and management skills with the science of biotechnology. Students learn the fundamental concepts of leadership, entrepreneurship and innovation, financial decision making, and marketing. They gain teamwork, management, and business development skills in the process and graduate prepared to become scientist-managers.

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Biotechnology with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Biotechnology in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The certificate program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 42-semester-hour master's degree and certificate requires 26 hours of biotechnology course work.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
BIOT 5120	Introduction to Biotechnology	3
BIOT 5219	The Biotechnology Enterprise	2
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production	3
BIOT 6214	Experimental Design and Biostatistics	2

BIOL 6299	Molecular Cell Biology for Biotechnology	3
CHEM 5620	Protein Chemistry	3
CHEM 7317	Analytical Biotechnology	3
Co-op		
BIOT 6500	Professional Development for Co-op	0
BIOT 6964	Co-op Work Experience	0

Concentrations

Complete one of the following seven concentrations:

- Molecular Biotechnology Concentration (p. 287)
- Process Sciences Concentration (p.)
- Biopharmaceutical Analytical Sciences Concentration (p. 287)
- Pharmaceutical Technologies Concentration (p.)
- Scientific Information Management Concentration (p.)
- Regulatory (p.) [Science Concentration](#) (p.)
- Biotechnology Enterprise Concentration (p. 288)

MOLECULAR BIOTECHNOLOGY CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology	3
BIOT 5850	Higher-Order Structure Analytics	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

PROCESS SCIENCES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5560	Bioprocess Fundamentals	3
BIOT 5635	Downstream Processes for Biopharmaceutical Production	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

BIOPHARMACEUTICAL ANALYTICAL SCIENCES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 7245	Biotechnology Applications Laboratory	3
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	3
CHEM 5616	Protein Mass Spectrometry	3
Electives (p. 288)		5

PHARMACEUTICAL TECHNOLOGIES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5640	Drug Product Processes for Biopharmaceuticals	3
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

SCIENTIFIC INFORMATION MANAGEMENT CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5400	Scientific Information Management for Biotechnology Managers	3
BIOT 7245	Biotechnology Applications Laboratory	3
DA 5020 or DA 5030	Collecting, Storing, and Retrieving Data Introduction to Data Mining/Machine Learning	4
PPUA 5301	Introduction to Computational Statistics	4

REGULATORY SCIENCE CONCENTRATION

Code	Title	Hours
BIOT 5330		3
BIOT 5340	Introduction to Biotherapeutic Approvals	3
BIOT 5500	Introduction to Regulatory Science	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		3

BIOTECHNOLOGY ENTERPRISE CONCENTRATION

Code	Title	Hours
BIOT 5225	Managing and Leading a Biotechnology Company	3
BIOT 5226	Biotechnology Entrepreneurship	3
BIOT 5227	Economics and Marketing for Biotechnology Managers	3
Electives (p. 288)		6

Elective List

Code	Title	Hours
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Choose electives from the list and/or one-credit BUSN graduate level courses. Electives not on this list may be chosen with faculty advisor approval.

BINF 6308	Bioinformatics Computational Methods 1	
BIOL 5307	Biological Electron Microscopy	
BIOL 5499	Plant Biotechnology	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Microbial Biotechnology	
BIOL 5569	Advanced Microbiology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	
BIOL 6381	Ethics in Biological Research	
BIOL 6399	Dynamics of Microbial Ecology	
BIOT 5220	The Role of Patents in the Biotechnology Industry, Past and Future	
BIOT 5225	Managing and Leading a Biotechnology Company	
BIOT 5226	Biotechnology Entrepreneurship	
BIOT 5227	Economics and Marketing for Biotechnology Managers	
BIOT 5560	Bioprocess Fundamentals	
BIOT 5635	Downstream Processes for Biopharmaceutical Production	

BIOT 5640	Drug Product Processes for Biopharmaceuticals
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis
CHEM 5616	Protein Mass Spectrometry
CHEM 5617	Protein Mass Spectrometry Laboratory
CHEM 5621	Principles of Chemical Biology for Chemists
CHEM 5625	Chemistry and Design of Protein Pharmaceuticals
CHEM 5638	Molecular Modeling
CHEM 7247	Advances in Nanomaterials
CHME 7340	Chemical Engineering Kinetics
ENTR 6200	Enterprise Growth and Innovation
ENTR 6210	Managing Operations in Early Stage Ventures
ENTR 6211	Entrepreneurship: Services and Retail Business Creation
ENTR 6212	Business Planning for New Ventures
HINF 5105	The American Healthcare System
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management
MGMT 6210	Law for Managers and Entrepreneurs
MGSC 6200	Information Analysis
NNMD 5270	Introduction to Nanomedicine
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
PHSC 6218	Biomedical Chemical Analysis
PHSC 6224	Behavioral Pharmacology and Drug Discovery
PHSC 6226	Imaging in Medicine and Drug Discovery
PHSC 6290	Biophysical Methods in Drug Discovery
PHSC 7010	Pharmaceutical Sciences Laboratory
TECE 6230	Entrepreneurial Marketing and Selling
TECE 6250	Lean Design and Development

Program Credit/GPA Requirements

34 total semester hours required
Minimum 3.000 GPA required

Health Data Analytics, MS

The digitization of healthcare systems in clinical settings, in combination with the explosion of personal data collection devices, provides the opportunity of using data for revolutionizing approaches to care at all levels with an emphasis on precision medicine and person-centered care. The ability to take advantage of this "Big Data" opportunity, however, requires expertise at the intersection of health informatics, data science, and computational modeling. The Master of Science in Health Data Analytics is designed to prepare students to succeed in this emerging field. This program offers a strong, competency-based curriculum that addresses data analytics ranging from data acquisition from traditional and emerging data streams, data aggregation methods, data mining algorithms, predictive computational modeling, and visualization techniques. Students can expect to amass a broad

and deep understanding of the various methods, software tools, and topical expertise needed to discover meaningful patterns in health-related data and effectively communicate their implications to a number of diverse stakeholders. Successful graduates of the Master of Science in Health Data Analytics will be effective practitioners and leaders in the rapidly developing domain of data analytics with a focus on health and healthcare.

The interdisciplinary Master of Science in Health Data Analytics consists of 12 courses, drawn from the College of Computer and Information Science and the Bouvé College of Health Science; a capstone project; and an ongoing series of seminars on topics in health data analytics. Two tracks will be available to matriculating students: standard and research based.

LEARNING OUTCOMES

- Proficiency in the health and healthcare ecosystem, including stakeholder roles such as payers, providers, and government; social determinants of health; wellness promotion; acute vs.chronic care
- Ability to acquire, store, and validate data; familiarity with common health-related data sources and formats
- Proficiency in analyzing data using statistical, epidemiological, and data-mining methods along with appropriate software tools and programming languages
- Ability to interpret and present analytical results to nontechnical stakeholders using visualization and accessible narrative structures

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Analytics/Modeling/Statistics		
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4
HINF 6400	Introduction to Health Data Analytics	3
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
Healthcare		
HINF 5102	Data Management in Healthcare	3
HINF 5105	The American Healthcare System	3
HINF Predictive Analy (TBA)		3

¹ Please see college administrator for course information.

Thesis/Capstone

Code	Title	Hours
Complete either Thesis or Capstone:		3
<i>Thesis</i>		
HINF Health Informatics (TBA)	Thesis	
<i>Capstone</i>		
HINF 7701	Health Informatics Capstone Project	

Electives

At least one course must be chosen from the methods list.

Code	Title	Hours
Methods		
Complete 3–6 semester hours from the following:		3-6
PHTH 6202	Intermediate Epidemiology	
PHTH 6210	Applied Regression Analysis	
PHTH 6440	Advanced Methods in Biostatistics	
CS 6350	Empirical Research Methods	
CAEP 7712	Intermediate Statistical Data Analysis Techniques	
CAEP 7716	Advanced Research and Data Analyses	2
Other Electives		
Complete 0–4 semester hours from the following:		0-4
ARTG 5330	Visualization Technologies 1	
ARTG 6320	Design of Information-Rich Environments	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 5300	Personal Health Interface Design and Development	
HINF 6215	Project Management	
HINF 6220	Database Design, Access, Modeling, and Security	
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
PHTH 5234	Economic Perspectives on Health Policy	

Program Credit/GPA Requirements

37 total semester hours required
 Minimum 3.000 GPA required

Health Informatics, MS

Northeastern’s interdisciplinary Master of Science in Health Informatics was the first MS in the field. The program seeks to prepare students to address the combined clinical, technical, and business needs of health-related professionals. Successful students graduate with the knowledge of how technology, people, health, and the healthcare system interrelate; the ability to use technology and information management to improve healthcare delivery and outcomes; and the skills to communicate effectively among healthcare practitioners, administrators, and information technology professionals.

With approval from the health informatics program director, selected students can substitute one course from the Graduate Certificate in Data Analytics for a technical core requirement in the MS in Health Informatics degree, and up to two more courses from the Graduate Certificate in Data Analytics can be counted as electives for the MS in Health Informatics degree.

Northeastern also offers graduate certificate programs in health informatics. Three certificate programs enable you to choose the one that addresses your specific goals. These programs are listed separately in this catalog:

- Graduate Certificate in Health Informatics Management and Exchange

- Graduate Certificate in Health Informatics Privacy and Security
- Graduate Certificate in Health Informatics Software Engineering

Courses in the certificate program also apply toward master's degree requirements. This gives you the flexibility to complete a certificate and be well on your way to earning a degree if you decide later to continue your education.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5105	The American Healthcare System	3
HINF 7701	Health Informatics Capstone Project	3
Business Management		
Complete two courses from the following:		6
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
HINF 6335	Management Issues in Healthcare Information Technology	
HINF 6240	Improving the Patient Experience through Informatics	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two courses from the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
Complete two courses from the following:		6
HINF 6220	Database Design, Access, Modeling, and Security	
HINF 6355	Key Standards in Health Informatics Systems	
HINF 6400	Introduction to Health Data Analytics	
PHTH 5202	Introduction to Epidemiology	
PHTH 5210	Biostatistics in Public Health	
PHTH 6210	Applied Regression Analysis	

PHTH 6400 Principles of Population Health 1

PHTH 6440 Advanced Methods in Biostatistics

One course from the following may count toward the technical core requirement:

DA 5020 Collecting, Storing, and Retrieving Data

DA 5030 Introduction to Data Mining/Machine Learning

PPUA 5301 Introduction to Computational Statistics

PPUA 5302 Information Design and Visual Analytics

Electives

Code	Title	Hours
Complete two courses from the following. Any course not taken to complete a core requirement may be taken as an elective.		
HINF 6345	Design for Usability in Healthcare	6
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

Minimum 33 total semester hours required

Minimum 3.000 GPA required

Law and Urban Public Health, JD/MPH

Northeastern University's School of Law and Bouvé College of Health Sciences offer a dual-degree JD/MPH in urban health. Given the worldwide trend toward urbanization, the Master of Public Health (MPH) in Urban Public Health recognizes the growing need for professionals trained to respond to unique public health challenges and opportunities facing urban populations. The MPH program brings together interdisciplinary faculty (from the School of Law, D'Amore-McKim School of Business, College of Social Sciences and Humanities, College of Computer and Information Science, and the Bouvé College of Health Sciences) with expertise in collaborating with diverse urban populations to offer students an opportunity to obtain practice-based knowledge, skills, and experience needed to address urban public health problems.

See JD/MPH program page (<http://www.northeastern.edu/law/academics/jd/dual-degrees/jdmph-bouve.html>) for more information.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in each required course.

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3

PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
PHTH 6200	Principles and History of Urban Health	3
PHTH 6204	Society, Behavior, and Health	3
PHTH 6208	Urban Community Health Assessment	3
Practicum		
PHTH 6966	Practicum	3
Capstone		
PHTH 6910	Public Health Capstone	3

Electives

Code	Title	Hours
Complete 9 semester hours from the following. In consultation with your faculty advisor, you may complete electives from another discipline: 9		
LAW 7300	Administrative Law	
LAW 7329	Environmental Law	
LAW 7335	Health Law	
LAW 7350	Negotiation	
LAW 7351	Prisoners' Rights Clinic	
LAW 7362	Poverty Law and Practice Clinic	
LAW 7410	Domestic Violence Clinic	
LAW 7428	State Local Government	
LAW 7463	Non-Profit Organizations	
LAW 7469	Disability Law	
LAW 7491	International Human Rights and the Global Economy	
LAW 7494	Bioethics and the Law	
LAW 7512	Problems in Public Health Law	
LAW 7514	Natural Resources Law	
LAW 7525	Law and Economic Development	
LAW 7527	Public Health Legal Clinic	
LAW 7526	Juvenile Courts: Delinquency, Abuse, Neglect	
LAW 7550	Refugee and Asylum Law	
LAW 7561	Private Litigation in the Public Interest	
LAW 7582	Elder Law	
LAW 7588	Reproductive and Sexual Rights and Health	
LAW 7600	Current Issues in Health Law and Policy	
LAW 7602	Bioproperty	
LAW 7606	Drug Law and Policy	
LAW 7617	Economic Perspectives on Health Policy	

Program Credit/GPA Requirements

42 total semester hours required for MPH. Please contact the School of Law (<https://www.northeastern.edu/law/academics/jd/dual-degrees>) for JD requirements.
 Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
First-year law courses		First-year law courses		Law co-op	
		0		0	0
Year 2					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PHTH 5202	3	PHTH 5120	3	PHTH 5540	3
PHTH 5210	3	PHTH 5212	3	LAW 7443	3
PHTH 6200	3	PHTH 5214	3		
PHTH 6204	3	PHTH 6208	3		
		12		12	6
Year 3					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PHTH 6966	3	Law school courses		Law school courses	
Law co-op		Law co-op			
		3		0	0
Year 4					
Fall	Hours	Spring	Hours		
PHTH 6910	3	February bar exam			
		3		0	

Total Hours: 36

Physician Assistant Studies and Health Informatics, MS/MS

The Northeastern University health informatics and physician assistant combined program allows qualified and interested students to achieve their goal of obtaining a more robust understanding of healthcare technology while also completing robust clinical training in the physician assistant program. This prepares a select group of exceptionally qualified clinicians to become leaders in healthcare technology application and development and fosters interdisciplinary collaboration in order to address problems in the healthcare and health information environments both locally and across the globe. The joint program is designed to provide students a greater understanding of technological issues in clinical practice, quantitative methods, and the use of scientific evidence and cutting-edge technology to optimize clinical workflows and improve patient outcomes.

This dual degree takes 34 months to complete (as opposed to 48, if each degree were pursued separately), and a total number of 8 credits are shared between both degrees.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Physician Assistant Requirements

A grade of C or higher is required in each course.

Code	Title	Hours
Required Core		
PA 6208	Professional Issues for Physician Assistants	2
PA 6326	Aspects of Primary Care	4
PA 6327	Emergency Medicine and Critical Care	2
PA 6328	Aging and Rehabilitation Medicine	2
PA 6329	Healthcare Delivery	2
Anatomy & Physiology		
PA 6200	Anatomy and Physiology 1	3
PA 6201	Anatomy and Physiology 2	3
Diagnosis & Evaluation		
PA 6203	Physical Diagnosis and Patient Evaluation 1	3
PA 6204	Physical Diagnosis and Patient Evaluation 2	3
Pharmacology		
PA 6205	Pharmacology 1	2
PA 6206	Pharmacology 2	2
PA 6207	Clinical Laboratory and Diagnostic Methods	4
Principles		
PA 6311	Principles of Medicine 1	4
PA 6312	Principles of Medicine 2	4
PA 6313	Principles of Medicine 3	4
PA 6320	Principles of Obstetrics and Gynecology	2
PA 6321	Principles of Surgery	2
PA 6322	Principles of Orthopedics	2
PA 6323	Clinical Neurology	2
PA 6324	Principles of Pediatrics	2
PA 6325	Principles of Psychiatry	2
Clinical		
PA 6400	Applied Study in Medicine	5
PA 6401	Applied Study in Ambulatory Medicine	5
PA 6402	Applied Study in Family Practice	5
PA 6403	Applied Study in Emergency Medicine	5
PA 6404	Applied Study in Obstetrics and Gynecology	5
PA 6405	Applied Study in Pediatrics	5
PA 6406	Applied Study in Surgery	5
PA 6407	Applied Study in Mental Health	5
PA 6408	Applied Study Elective	5

Health Informatics Requirements

A grade of B– or higher is required in each course.

Code	Title	Hours
Required Core		
HINF 7701	Health Informatics Capstone Project	3
Business Management		
Complete two courses from the following:		6
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	

HINF 6240	Improving the Patient Experience through Informatics	
HINF 6335	Management Issues in Healthcare Information Technology	
PHTH 5226	Strategic Management and Leadership in Healthcare	
Health Informatics		
Complete two courses from the following:		6
HINF 5102	Data Management in Healthcare	
HINF 5110	Global Health Information Management	
HINF 5200	Theoretical Foundations in Personal Health Informatics	
HINF 6205	Creation and Application of Medical Knowledge	
HINF 6350	Public Health Surveillance and Informatics	
HINF 6404	Patient Engagement Informatics and Analytics	
HINF 6405	Quantifying the Value of Informatics	
PHTH 5232	Evaluating Healthcare Quality	
Technical		
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
Electives		
Complete two courses from the following:		6
HINF 6345	Design for Usability in Healthcare	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

128 total semester hours required

Minimum 3.000 GPA required

Public Health and Health Informatics, MPH/MS

The Master of Public Health (MPH) and Master of Science in Health Informatics (MSHI) combined program allows qualified and interested students to prepare to lead healthcare at the nexus between public health and health informatics. Graduates of this program will be well-educated in the complex issues associated with improvements in information technology, as well as changes to the public health and healthcare delivery systems. Recognizing the increasing overlap between health informatics and public health with a focus on urban health, this program incorporates course work from both the MPH and MSHI curricula for both degrees, reducing tuition costs and saving one year of study compared to obtaining both degrees individually.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

A grade of B– or higher is required in each course.

Public Health Requirements

Code	Title	Hours
Required Core		
PHTH 5120	Race, Ethnicity, and Health in the United States	3
PHTH 5202	Introduction to Epidemiology	3
PHTH 5210	Biostatistics in Public Health	3
PHTH 5212	Public Health Administration and Policy	3
PHTH 5214	Environmental Health	3
PHTH 5540	Health Education and Program Planning	3
or PPUA 6509	Techniques of Program Evaluation	
PHTH 6204	Society, Behavior, and Health	3
Urban Health		
PHTH 6200	Principles and History of Urban Health	3
PHTH 6208	Urban Community Health Assessment	3

Health Informatics Requirements

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 6220	Database Design, Access, Modeling, and Security	3
HINF 6240	Improving the Patient Experience through Informatics	3
HINF 6355	Key Standards in Health Informatics Systems	3
HINF 6405	Quantifying the Value of Informatics	3

Capstone and Practicum

Code	Title	Hours
PHTH 6910	Public Health Capstone	3
PHTH 6966	Practicum	3

Electives

Code	Title	Hours
Complete three of the following, with at least one course completed from each group:		
Group 1		
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management	
HINF 6202	Business of Healthcare Informatics	
HINF 6215	Project Management	
Group 2		
PHTH 5226	Strategic Management and Leadership in Healthcare	
PHTH 5232	Evaluating Healthcare Quality	
HINF 6404	Patient Engagement Informatics and Analytics	

Program Credit/GPA Requirements

57 total semester hours required
Minimum 3.000 GPA required

Biopharmaceutical Analytical Sciences, Graduate Certificate

The Graduate Certificate in Biopharmaceutical Analytical Sciences has been designed in response to a need in the biotechnology industry for individuals with an advanced knowledge of the principles and practices of state-of-the-art analyses of protein with focus on the characterization of innovator and biosimilars. Individuals, particularly those who are working in the various sectors of biotechnology including basic research of biological systems, discovery, development, and manufacturing of biopharmaceuticals, have an opportunity to improve their competency and learn new practical skills that enable them to increase productivity and further contribute to their professions. In addition, the certificate was designed for both individuals with and without experience in biopharmaceuticals and their analysis.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
CHEM 5616	Protein Mass Spectrometry	3
CHEM 5617	Protein Mass Spectrometry Laboratory	3
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	3
CHEM 5660	Analytical Biochemistry	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Early Intervention, Graduate Certificate

Northeastern University's Certificate Program in Early Intervention is an interdisciplinary, preservice training program that is designed to fulfill requirements for certification as an early intervention specialist, at the advanced provisional level, as set forth by the Massachusetts Department of Public Health (DPH). The interdisciplinary nature of the program is facilitated by the interaction of graduate students from school psychology, counseling psychology, physical therapy, speech and language pathology, and undergraduate students from human services and psychology.

The goals for the early intervention certificate program are:

- To prepare personnel to provide services to infants and toddlers with disabilities and their families, from linguistically and culturally diverse backgrounds in urban environments
- To prepare personnel who have attained all competencies relative to early intervention, specified by the Massachusetts DPH, and that are consistent with best practice and research
- To prepare personnel in an interdisciplinary manner, drawing from Northeastern University's multidisciplinary resources
- To prepare personnel to function effectively across teams (individualized family service plan teams, community teams, interagency teams) and to understand the roles of their interdisciplinary teammates

Upon graduation, students are eligible for employment in an early intervention service delivery setting.

The program is delivered in a hybrid format. Classes meet on campus one day each month, and additional course content is delivered through online distance education. The program can be taken alone or integrated with bachelor's, master's, or clinical doctoral degree programs. Personnel who are working in the field may use their work site for field training. Degree-bearing programs incorporate the courses in a variety of arrangements, meaning that some of the program's classes stand in place for others and/or serve as electives. These program plans are worked out with students' advisors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B or higher is required in all courses.

Code	Title	Hours
Required Core		
CAEP 5150	Early Intervention: Family Systems	3
CAEP 5151	Early Intervention: Infant and Toddler Development, Risk, and Disability	3
CAEP 5152	Early Intervention: Planning and Evaluating Services	3
SLPA 6335	Early Intervention: Assessment and Intervention	3
Practicum		
CAEP 8425	Early Intervention Practicum 1	2
CAEP 8426	Early Intervention Practicum 2	2

Program Credit/GPA Requirements

16 total semester hours required
Minimum 3.000 GPA required

Health Informatics Management and Exchange, Graduate Certificate

The certificate program in health informatics management and exchange offers you the opportunity to obtain the knowledge needed to support the collection, management, retrieval, and exchange of electronic health data. It is designed to prepare you for a position as a specialist in data management, interoperability standards, and health database design.

- Eight-month program
- Five courses, 15 semester hours

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in all course work.

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5102	Data Management in Healthcare	3

Management and Exchange		
HINF 6205	Creation and Application of Medical Knowledge	3
HINF 6220	Database Design, Access, Modeling, and Security	3
HINF 6355	Key Standards in Health Informatics Systems	3

Program Credit/GPA Requirements

15 total semester hours required
Minimum 3.000 GPA required

Health Informatics Privacy and Security, Graduate Certificate

The certificate program in health informatics privacy and security combines knowledge of health informatics with a strong foundation in important information security issues. Northeastern's status as a National Security Agency Center of Excellence for Information Security Education and Research ensures the program is both relevant and of high academic quality.

- Eight-month program
- Five courses, 18 semester hours

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B– or higher is required in all course work.

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5102	Data Management in Healthcare	3
Privacy and Security		
IA 5130	Computer System Security	4
IA 5150	Network Security Practices	4
IA 5200	Security Risk Management and Assessment	4

Program Credit/GPA Requirements

18 total semester hours required
Minimum 3.000 GPA required

Health Informatics Software Engineering, Graduate Certificate

This certificate program offers software engineers the background in health informatics (as well as interchange and interoperability standards) needed to better understand the context in which they work and perform effectively in a health-related organization. Program design is flexible to allow completion on a rapid schedule or a slower pace that is more compatible with full-time workers.

- Eight-month program
- Five courses, 15 semester hours

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of B- or higher is required in all course work.

Code	Title	Hours
Required Core		
HINF 5101	Introduction to Health Informatics and Health Information Systems	3
HINF 5102	Data Management in Healthcare	3
Management and Exchange		
HINF 6205	Creation and Application of Medical Knowledge	3
HINF 6345	Design for Usability in Healthcare	3
HINF 6355	Key Standards in Health Informatics Systems	3

Program Credit/GPA Requirements

15 total semester hours required

Minimum 3.000 GPA required

Website (<http://www.northeastern.edu/mls>)

Jeremy R. Paul, JD, Dean

Kristin Madison, JD, PhD, Associate Dean for Academic Affairs

Margaret Y.K. Woo, JD, LL.M., Associate Dean for Research and Interdisciplinary Education

Gregory Tilley, MBA, Associate Dean for Finance and Administration

Northeastern University School of Law

400 Huntington Avenue

Boston, MA 02115

617.373.5149

lawweb@northeastern.edu

Programs

Master of Legal Studies (MLS)

- Legal Studies—Online (p. 296)

Graduate Certificate

- Business Law (p. 297)
- Health Law (p. 298)
- Healthcare Compliance (p. 298)
- Human Resources Law (p. 299)
- Intellectual Property Law (p. 299)

Legal Studies, MS—Online

This degree is designed for professionals who want a deeper understanding of law and legal concepts. Such professionals may be found in nonprofit organizations, foundations, financial services firms, pharmaceutical companies, insurance firms, compliance departments, or a host of other commercial and noncommercial settings. Examples of the professionals who would be interested in this degree are human resource professionals, claims representatives for insurance companies, professionals in healthcare organizations, bank loan officers, real estate brokers, risk managers, government affairs officers, management consultants advising organizations, development officers working on planned giving, and software entrepreneurs. They desire to know more about the law and to be able to deal more effectively with the lawyers with whom they interact during their professional lives. The degree includes concentrations in human resources law, business law, intellectual property law, and health law.

Program Plan

Students take one 3-semester-hour course per term. A term is approximately eight weeks; there are two terms (A and B) in each of three semesters (fall, spring, and summer). The course work is spread over 10 terms or five semesters. Every student in their first semester takes two required foundation courses. Students then take four out of five core courses, plus three or four elective courses from any of four concentrations. Students choosing not to concentrate may take courses from any concentration.

Program Features

TOTAL DEGREE CREDIT REQUIRED

The program requires 30 semester hours.

COURSE ORGANIZATION

The program comprises 10 courses:

- Each course is eight weeks
- Two courses are taken per semester
- Each course is 3 semester hours
- Course types:
 - Two foundation courses
 - Four or five core courses
 - Three or four elective courses

CONCENTRATIONS

The program includes four concentrations plus a general track. The concentrations are:

- Business Law
- Health Law
- Human Resources Law
- Intellectual Property Law

ACADEMIC STRUCTURE

- Six eight-week sessions per calendar year
 - Spring A
 - Spring B
 - Summer A
 - Summer B
 - Fall A
 - Fall B
- Two eight-week courses (3 semester hours each) back-to-back in each 16-week semester
- Total of 10 courses needed to graduate

TIME TO DEGREE COMPLETION

Normal completion time is five semesters of part-time study, with students taking one course at a time.

ADMISSION CYCLES

- Fall 1 session
- Spring 1 session
- Summer 1 session

ADMISSION REQUIREMENTS

- Bachelor's degree from regionally accredited institution
- Online application
- Application fee—none
- Personal statement with designated questions to be answered
- Two letters of recommendation
- TOEFL for international students
- Transcripts from all previous higher educational institutions attended.
- Professional resumé

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Foundation Courses

Code	Title	Hours
LS 6101	Introduction to Legal Studies 1: Law and Legal Reasoning	3
LS 6102	Introduction to Legal Studies 2	3

Core Courses

Code	Title	Hours
Complete at least four of the following:		12-15
LS 6110	Law of Information and Records	3
LS 6120	Law and Strategy	3
LS 6130	Negotiation and Advocacy	3
LS 6140	Data Regulation and Compliance	3
LS 6150	Law and Organizational Management	3

Specialization Elective Courses

Code	Title	Hours
Complete three or four of the following:		9-12
LS 6160	Regulation and Global Business Strategies	3
LS 6170	Financial Transactions	3
LS 6180	Health Law Survey	3
LS 6181	Healthcare Regulation and Compliance	3
LS 6182	Patient Records, Privacy, and Security	3
LS 6210	Special Topics in Employee Rights and Employer Obligations	3
LS 6211	Antidiscrimination Law	3
LS 6212	Wages and Benefits	3
LS 6230	Intellectual Property Survey	3

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Business Law, Graduate Certificate

Program ABA Pending Approval

The Graduate Certificate in Business Law is designed to provide professionals in large and small enterprises with an ability to recognize, navigate, and leverage the laws that regulate business organizations and transactions.

Program Plan

Students take one 3-credit course per term. Each term is approximately eight weeks, and there are two terms (A and B) in each of three semesters (fall, spring, and summer). The course work may be spread over two or three semesters. Every student begins the program by taking a required foundation course (Introduction to Legal Studies II). Students then take three additional required courses, each that focuses specifically on health law.

Program Features

TOTAL CERTIFICATE CREDIT REQUIREMENT

The program requires 12 semester hours.

COURSE ORGANIZATION

The program comprises four courses:

- Each course is eight weeks
- One or two courses are taken each semester
- Each course is 3 semester hours
- Course type:
 - One foundation course
 - Three certificate-specific courses

ACADEMIC STRUCTURE

- Six eight-week sessions per calendar year.
 - Fall A
 - Fall B
 - Spring A
 - Spring B
 - Summer A
 - Summer B

One or two eight-week courses (3 semester hours each) taken in one to three semesters.

Total of four courses needed to complete certificate.

TIME TO CERTIFICATE COMPLETION

Normal completion time is two to three semesters (depending upon course sequencing) of part-time study, with students taking one course at a time.

ADMISSIONS CYCLES

- Fall B
- Spring B
- Summer B

ADMISSIONS REQUIREMENTS

- Bachelor's degree from regionally accredited institution
- Online application
- Application fee—none
- Personal statement with designated questions to be answered
- One letter of recommendation
- TOEFL for international students
- Transcripts from all previous higher educational institutions attended
- Professional resumé

Program Requirements

Program Pending ABA Approval

Complete all courses and requirements listed below unless otherwise indicated.

Requirements

Code	Title	Hours
LS 6102	Introduction to Legal Studies 2	3
LS 6170	Financial Transactions	3
LS 6160	Regulation and Global Business Strategies	3
Complete one of the following:		3
LS 6230	Intellectual Property Survey	
LS 6210	Special Topics in Employee Rights and Employer Obligations	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Health Law, Graduate Certificate

The Graduate Certificate in Health Law is designed to provide professionals who work in healthcare with the skills needed to recognize, navigate, and leverage the many legal issues that arise within this heavily regulated industry.

Program Plan

Students take one 3-credit course per term. Each term is approximately eight weeks, and there are two terms (A and B) in each of three semesters (fall, spring, and summer). The course work may be spread over two or three semesters. Every student begins the program by taking a required foundation course (Introduction to Legal Studies 2 (LS 6102)). Students then take three additional required courses, each that focuses specifically on health law.

Program Features

TOTAL CERTIFICATE CREDIT REQUIREMENT

The program requires 12 semester hours.

COURSE ORGANIZATION

The program comprises four courses:

- Each course is eight weeks
- One or two courses are taken each semester
- Each course is 3 semester hours
- Course type:
 - One foundation course
 - Three certificate-specific courses

ACADEMIC STRUCTURE

- Six eight-week sessions per calendar year:
 - Fall A
 - Fall B
 - Spring A
 - Spring B
 - Summer A
 - Summer B

One or two eight-week courses (3 semester hours each) taken in one to three semesters.

Total of four courses needed to complete certificate.

TIME TO CERTIFICATE COMPLETION

Normal completion time is two to three semesters (depending upon course sequencing) of part-time study, with students taking one course at a time.

ADMISSIONS CYCLES

- Fall B
- Spring B
- Summer B

ADMISSIONS REQUIREMENTS

- Bachelor's degree from regionally accredited institution
- Online application
- Application fee—none
- Personal statement with designated questions to be answered
- One letter of recommendation
- TOEFL for international students
- Transcripts from all previous higher educational institutions attended
- Professional resumé

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Requirements

Code	Title	Hours
LS 6102	Introduction to Legal Studies 2	3
LS 6180	Health Law Survey	3
LS 6181	Healthcare Regulation and Compliance	3
LS 6182	Patient Records, Privacy, and Security	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Healthcare Compliance, Graduate Certificate

Pending American Bar Association approval

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Requirements

Code	Title	Hours
Required Courses		
	Introduction to Health (TBA)	1
	Healthcare Compliance (TBA)	2
	Healthcare Compliance (TBA)	2
	Healthcare Compliance (TBA) Stone	1
LS 6182	Patient Records, Privacy, and Security	3
LS 6180	Health Law Survey	3
	or HINF 5105 The American Healthcare System	
Elective		
Complete one of the following:		3
FINA 6200	Value Creation through Financial Decision Making	
HRMG 6220	Health Organization Management	

LS 6110	Law of Information and Records
LS 6120	Law and Strategy
LS 6140	Data Regulation and Compliance
PHTH 5232	Evaluating Healthcare Quality
SCHM 6223	Managing Healthcare Supply Chain Operations
STRT 6220	Strategic Management for Healthcare Organizations

Program Credit/GPA Requirements

15 total semester hours required
 Minimum 3.000 GPA required

Human Resources Law, Graduate Certificate

The Graduate Certificate in Human Resources Law is designed to provide professionals who work in human resources with the skills needed to recognize, navigate, and leverage the many legal issues that arise within this heavily regulated field.

Program Plan

Students take one 3-credit course per term. Each term is approximately eight weeks, and there are two terms (A and B) in each of three semesters (fall, spring, and summer). The course work may be spread over two or three semesters. Every student begins the program by taking a required foundation course (Introduction to Legal Studies 2 (LS 6102)). Students then take three additional required courses, each that focuses specifically on health law.

Program Features

TOTAL CERTIFICATE CREDIT REQUIREMENT

The program requires 12 semester hours.

COURSE ORGANIZATION

The program comprises four courses:

- Each course is eight weeks
- One or two courses are taken each semester
- Each course is 3 semester hours
- Course type:
 - One foundation course
 - Three certificate-specific courses

ACADEMIC STRUCTURE

- Six eight-week sessions per calendar year.
 - Fall A
 - Fall B
 - Spring A
 - Spring B
 - Summer A
 - Summer B

One or two eight-week courses (3 semester hours each) taken in one to three semesters.

Total of four courses needed to complete certificate.

TIME TO CERTIFICATE COMPLETION

Normal completion time is two to three semesters (depending upon course sequencing) of part-time study, with students taking one course at a time.

ADMISSIONS CYCLES

- Fall B
- Spring B
- Summer B

ADMISSIONS REQUIREMENTS

- Bachelor's degree from regionally accredited institution
- Online application
- Application fee—none
- Personal statement with designated questions to be answered
- One letter of recommendation
- TOEFL for international students
- Transcripts from all previous higher educational institutions attended
- Professional resumé

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Requirements

Code	Title	Hours
LS 6102	Introduction to Legal Studies 2	3
LS 6210	Special Topics in Employee Rights and Employer Obligations	3
LS 6211	Antidiscrimination Law	3
LS 6212	Wages and Benefits	3

Program Credit/GPA Requirements

12 total semester hours required
 Minimum 3.000 GPA required

Intellectual Property Law, Graduate Certificate

Program Pending ABA Approval

The Graduate Certificate in Intellectual Property Law is designed to provide professionals who work in intellectual property, technology transfer, licensing, or related areas, as well as inventors and entrepreneurs, with the skills they need to recognize and protect intellectual property rights.

Program Plan

Students take one 3-credit course per term. Each term is approximately eight weeks, and there are two terms (A and B) in each of three semesters (fall, spring, and summer). The course work may be spread over two or three semesters. Every student begins the program by taking a required

foundation course (Introduction to Legal Studies 2 (LS 6102). Students then take three additional required courses, each that focuses specifically on health law.

Program Features

TOTAL CERTIFICATE CREDIT REQUIREMENT

The program requires 12 semester hours.

COURSE ORGANIZATION

The program comprises four courses:

- Each course is eight weeks
- One or two courses are taken each semester
- Each course is 3 semester hours
- Course type:
 - One foundation course
 - Three certificate-specific courses

ACADEMIC STRUCTURE

- Six eight-week sessions per calendar year.
 - Fall A
 - Fall B
 - Spring A
 - Spring B
 - Summer A
 - Summer B

One or two eight-week courses (3 semester hours each) taken in one to three semesters.

Total of four courses needed to complete certificate.

TIME TO CERTIFICATE COMPLETION

Normal completion time is two to three semesters (depending upon course sequencing) of part-time study, with students taking one course at a time.

ADMISSIONS CYCLES

- Fall B
- Spring B
- Summer B

ADMISSIONS REQUIREMENTS

- Bachelor's degree from regionally accredited institution
- Online application
- Application fee—none
- Personal statement with designated questions to be answered
- One letter of recommendation
- TOEFL for international students

- Transcripts from all previous higher educational institutions attended
- Professional resumé

Program Requirements

****Program Pending ABA Approval****

Complete all courses and requirements listed below unless otherwise indicated.

Requirements

Code	Title	Hours
LS 6102	Introduction to Legal Studies 2	3
LS 6230	Intellectual Property Survey	3
LS 6231	Identifying and Securing Intellectual Property Rights	3
LS 6232	Intellectual Property and Media	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

College of Professional Studies

Website (<http://www.cps.neu.edu/degree-programs/graduate>)

Mary Loeffelholz, PhD, Dean of the College of Professional Studies and Vice President of Professional Education

David Fields, PhD, Associate Dean of Graduate Academic and Faculty Affairs

Lydia Young, PhD, Associate Dean of Academic and Faculty Affairs; Director of Graduate School of Education

50 Nightingale Hall
877.668.7727
617.373.2400

Academic Policies and Procedures

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Master's Degree Admission Requirements

Note that all master's degrees offered through the College of Professional Studies (CPS) have the following admission requirements:

- Online application
- Statement of purpose (500–1,000 words)
- Professional resumé
- Official undergraduate transcript(s) noting conferral of a bachelor's degree
- Two letters of recommendation

- English-language proficiency proof (for non-native English-language speakers)
- TOEFL, IELTS, or TOEIC scores

Some programs have additional requirements.

Transfer Credit Policies

All graduate transfer credit awards are made on a case-by-case basis. Transfer credit awards are made for eligible courses successfully completed at regionally and programmatically accredited institutions. The Council for Higher Education Accreditation provides information about the organizations responsible for these two forms of accreditation. Official transcripts from all institutions should be sent directly to the College of Professional Studies Office of Admissions at the time of application.

Students seeking transfer credits earned at institutions outside the United States should submit an official English evaluation completed by an approved credential evaluator. Course descriptions and/or syllabi also should be translated into English and submitted to the College of Professional Studies Office of Admissions.

A maximum of 12 quarter hours or four 3-credit courses or three 4-credit courses obtained at another institution may be accepted as transfer toward the degree, provided the credits consist of work taken at the graduate level for graduate credit, carry minimum grades of B (or 3.000 on a 4.000 scale), have been earned at an accredited institution or equivalent, and have not been used toward any baccalaureate or advanced degree or certificate of advanced graduate study at another institution.

Transfer credits must be no more than five academic years old at the time the student is admitted to graduate study. Courses older than five years will be accepted only in rare circumstances.

Graduate Certificate Transfer Credit Policies

- A maximum of 4 quarter hours (one course) of transfer credit

Master Degree Transfer Credit Policies

- A maximum of 12 quarter hours of transfer credit

Doctoral Degree Transfer Credit Policies

- A maximum of 9 quarter hours of transfer credit for Doctor of Education students
- A maximum of 8 quarter hours of transfer credit for Transitional Doctor of Physical Therapy students
- No transfer credit is awarded for students in the Doctor of Law and Policy program

Special Student Status

Graduate applicants to the College of Professional Studies may be eligible to take up to two graduate (nondoctoral) courses toward their program while completing the formal application process by seeking special student status (<http://www.cps.neu.edu/admissions/graduate/special-students.php>).

- Students taking courses under special student status are expected to satisfy applicable course prerequisites before enrolling in a course.
- Students taking courses under special student status are not eligible for financial aid.
- Special student status does not guarantee acceptance.
- The maximum number of courses students may take under special student status is two. After completing two courses, students will be blocked from further course registration until they have been officially accepted into a program.

The following programs are not available for special student status: Master of Arts in Teaching (MAT); Master of Education, Special Education Concentration; Master of Science in Applied Nutrition; Doctor of Education; Doctor of Law and Policy.

Special student status is not an option for students seeking an F-1 visa.

Personal Professional Enrichment (PPE)

Students interested in taking graduate-level (nondoctoral) courses for personal or professional enrichment (PPE) need to complete an online application (<http://www.cps.neu.edu/admissions/graduate>) as PPE students. Once approved, students will be able to register through their myNortheastern account.

- Students on PPE status are expected to satisfy applicable course prerequisites before enrolling in a course.
- Students taking courses while on PPE status may elect to apply to a graduate certificate or degree program by completing the formal application process (<http://www.cps.neu.edu/admissions/graduate>). Up to two qualifying courses (or 8 credits) completed while on PPE status may be applied to the intended program of study. To be eligible, the minimum earned grade for the course(s) must be B.
- Students taking courses under PPE status are not eligible for financial aid.

PPE status is not an option for students seeking an F-1 visa.

New Student Orientation (On-Ground and Online)

New students taking courses on-ground receive an invitation to the on-ground orientation. The purpose of New Student Orientation is to provide information and tools for each student's success from the point of program entry to degree completion. All new students are expected to attend the on-ground orientation. If students cannot attend the on-ground orientation, they should thoroughly review the Student Reference Guide (available on the CPS website at: <https://cps.northeastern.edu/academic-resources>) and the New Admitted Student site located at <http://www.orientation.cps.northeastern.edu/>.

Academic Resources

Interactive Academic Integrity Checklist (IAIC)

The Interactive Academic Integrity Checklist (IAIC) is a Flash-based tool students can use before they turn in every assignment to ensure that they have not accidentally committed any of the most common violations of the academic integrity policy. Additionally, the IAIC contains links to examples of APA- and MLA-style formatting. See the version for desktop internet browsers (<http://nuonline.adobeconnect.com/academicintegritychecklist>) or the version for mobile devices (http://nuonline.adobeconnect.com/academicintegritychecklist_mobile).

Global Student Success

10 Belvedere
617.373.2455
globalss@neu.edu
www.cps.neu.edu/gss (<http://www.cps.neu.edu/gss>)

Global Student Success is committed to supporting the success of international students at Northeastern University through cross-cultural, linguistic, and academic support services. We also partner with faculty, staff, and administrators to integrate global dimensions and cross-cultural understanding into the Northeastern experience.

International Tutoring Center

Basement of Snell Library
617.373.2455
globalss@neu.edu
www.cps.neu.edu/gss (<http://www.cps.neu.edu/gss>)

Tutors provide high-quality ESL writing instruction and tutoring for international students who need assistance with papers, assignments, TOEFL writing, and research projects. Students can meet one-on-one with an ESL tutor for 50-minute appointments. This is a free service for Northeastern international students.

Smarthinking

Smarthinking is a free online tutoring service accessed through the student's Blackboard account for College of Professional Studies students.

Online tutoring sessions can be synchronous or asynchronous. Many different subjects such as writing, reading, basic math through multivariate calculus, business, biology, chemistry, and physics are available.

Attendance Requirements

Class participation is essential to success no matter the course format or its delivery.

Attendance requirements vary. It is the student's responsibility to ascertain what each instructor requires. If a student will be absent for any reason (e.g., illness, religious beliefs, or jury duty), it is his or her responsibility to inform the instructor and to abide by the attendance requirements as explained in the course syllabus. Unexplained absence from class or failure to meet a course deadline may seriously affect the student's academic progress and may result in a final grade of F.

"I Am Here" (IAH) Process

After course registration, students are required to verify their intent to enroll in College of Professional Studies class(es) through their myNEU account during the first week of each class start. This verification process is called "I Am Here" (IAH). Students who fail to complete this process on time will be dropped from the class(es), which may impact their financial aid or international student visa eligibility.

Students are responsible for ensuring completion of the IAH process, which requires that they do not log out of the system early. Students who do not receive a "Successful Completion" message have not reached the end of the procedure and must start again. Sometimes it may take 24 hours before students can restart the procedure.

Students registering for the first time after the start of classes will be considered "Here" for the semester.

Students who experience difficulty with the process or have questions should email the Office of the Registrar (registrar@northeastern.edu).

Nonattendance

Nonattendance does not constitute official course dropping or withdrawal, which means the student is fully responsible for the academic and financial consequences.

A student who registers for a course and completes the IAH process but does not officially drop the course by the deadline, regardless of his or her level of participation or attendance/nonattendance, is responsible for paying 100 percent of the tuition charges and applicable fees and the final earned grade. A student in this situation may earn an F grade that will be part of his or her permanent academic record.

Like all grades for courses attempted and/or completed, a grade earned due to nonattendance impacts a student's academic progression, an international student's visa eligibility, and a federal financial aid recipient's aid eligibility and award.

Reentry to Program

Application for reentry into any academic program is required of students whose studies are interrupted voluntarily for a period of one to three years. Students who are dismissed academically must wait at least one year before applying for reinstatement.

Students are expected to meet the requirements of the program curriculum current at the time of the approved reentry. If a student does not enroll in the term in which he or she was approved for reentry, he or she must follow the curriculum requirements for the term in which he or she resumes course work with approval. If a student waits for more than one year to resume his or her studies after being approved for reentry, he or she will have to apply for reentry again.

If the program into which the student is seeking reentry is no longer offered, the student may choose to enroll in another program if he or she meets the admissions requirements for that program. Contact the Office of Academic Advising (<http://www.cps.neu.edu/student-resources/OAA.php>) for assistance and to complete the appropriate form.

Readmission to Program

A new admission application is required of students whose studies are interrupted voluntarily for more than three years.

Students are expected to meet the requirements of the program curriculum current at the time of the approved readmission. If the program into which the student is seeking readmission is no longer offered, the student may apply to another program and must meet the admissions requirements for that program. Contact the Office of Admissions (<http://www.cps.neu.edu/admissions>) for assistance and to complete the admission application.

If readmitted, transfer credits that a student was previously awarded will be reevaluated following the transfer credit award rules current at the time of readmission. It is at the discretion of the academic program to determine applicability of courses previously completed.

Full-Time Status

A graduate (nondoctoral) student is considered a full-time student if he or she is enrolled in 9 quarter hours of graduate credit for the quarter. An

exception is made for students matriculated in master's degree programs that only require 4-credit courses, in which case full-time student status is attained with enrollment in 8 quarter hours of graduate credit for the quarter.

A doctoral student's full-time status is determined by the structure of the program.

Note that full-time status may be defined differently for federal loan purposes. International students have other considerations/requirements to maintain their visa eligibility.

Course Load

Federal financial aid recipients must be enrolled in and successfully complete a minimum number of credits each term to maintain eligibility. For more information, contact your financial aid counselor.

Course Overload

A maximum course load (different from full-time status) for a graduate (nondoctoral) student is 16 credits taken across a 12-week term, with no more than 8 credits per 6-week session.

To be eligible for a course overload (greater than 16 credits per 12-week term or greater than 8 credits per 6-week session), a graduate (nondoctoral) student must:

- Have a record of successful study with 12 or more credits a term at Northeastern University
- Have a minimum cumulative grade-point average of 3.500
- Provide a rationale to support the request

Students need to complete the appropriate form (<http://cps.neu.edu/student-resources/academic-forms.php>) and return it to their career and academic coach. Course overload is approved per term.

Each doctoral program has its own enrollment and course load requirements. Doctoral students who wish to seek a course overload must consult with the program director or designee.

International Student Enrollment Requirements

In order to maintain lawful student status in the United States, international students must be mindful of the rules and regulations that govern their nonimmigrant visa classification. Numerous U.S. federal regulations make it especially important for students in the F (student) and J (exchange visitor) categories to consult regularly with an international student advisor at the Office of Global Studies (OGS) before taking any action that might impact their immigration status and educational endeavors in the United States.

All international students in F or J status must register before each quarter starts. It is strongly recommended that international students register for an appropriate full-time course load at least one month before the quarter starts. Any exceptions from full-time registration requirements must be preapproved by the OGS in accordance with specified regulations.

In the College of Professional Studies, there are 4 quarters that make up each academic year. Each 12-week quarter (term) in fall, winter, and spring is made up of Parts of Term (courses that are scheduled for less than 12 weeks). Some courses are scheduled for the entire 12 weeks of a quarter, while others are scheduled for either the first 6 weeks or the last 6 weeks. A full summer term is 8 weeks with Parts of Term as well. Students in F-1 and J-1 status must remain registered at all times during a quarter to remain in compliance. International students are not allowed to take courses during only one-half of an academic quarter.

Restrictions on course formats apply to international student enrollment requirements.

To achieve full-time status, graduate and doctoral international students must be enrolled in 8–9 credits each quarter. International students should consult with their student success specialist to develop a course plan to maintain their international student status.

For a 9-credit course load, international students must take at least 6 credits of courses that are held on campus, in the on-ground, blended, or hybrid format. Students may not take classes on campus for just the first or second 6 weeks of an 8- or 12-week quarter and then take only online courses during the other half of the term. For an 8-credit course load, international students must take at least 4 credits of courses that are held on campus, in blended or hybrid format.

Full-time status must be maintained for F-1 visa students throughout the academic year with the following exceptions:

- A student whose first term is *not* summer does not need to be enrolled in the summer term.
 - If a student's first term of enrollment is summer, he or she must be enrolled full-time that summer. For the second and subsequent summer terms, he or she does not need to be enrolled.
- In the final academic term of a student's program of study, enrollment may be for fewer than 9 credits, but it must either be on campus or a combination of on campus and online throughout the entire term.
- Contact the OGS (<http://www.northeastern.edu/issi/contactus.html>) if you would like or need one-on-one guidance and assistance on the vast array of federal requirements and procedures related to immigration and maintaining your legal status throughout your studies.

Directed Study

Directed studies are offered when a course is required for a student's program of study but said course is not available in a given academic term and there is immediacy for a student to complete said course. Academic deans/directors will make the decision if there is a compelling need to run a course as a directed study.

Independent Study

Independent study is an opportunity for a degree student to work independently under the supervision of an instructor to undertake special research, literature review, or experimental study projects in areas related to his or her program of study that he or she cannot accomplish as part of a standard course in the curriculum. A degree student may take up to two independent studies. The work to be done for an independent study is usually crafted by the student, with faculty input. Independent studies are entirely optional and not needed to graduate. A completed Request for Independent Study form (<http://www.cps.neu.edu/student-resources/academic-forms.php>), signed by both the student and the faculty member, must be submitted to the academic program for review and approval.

Active-Duty Military Personnel

As a member of the Service Member Opportunity Colleges, the College of Professional Studies' academic residency requirement is different for active-duty service members. Active-duty service members are required to complete 30 percent of the graduate certificate/degree program at the College of Professional Studies.

Registration and Taking Courses

Course Registration

For course registration information, visit the College of Professional Studies webpage (<http://www.cps.neu.edu/class-registration>).

Course registration procedures are as follows:

- Newly accepted and returning students add or drop courses through their myNortheastern account any time during the registration period.
- Certificate- and degree-seeking students whose studies have been interrupted voluntarily for one to three years or more need to first apply for reentry through the Office of Academic Advising before registering for course(s).
- Global program students should consult with their program to determine if they need to register on their own or if the program will register them.

All students need to be mindful of the college's course add/drop policies and deadlines to register as early as possible with the intent to secure a spot in the preferred course and to avoid being charged in full for missing the course drop/withdrawal deadline.

Auditing a Course

Graduate (nondoctoral) students are permitted to audit graduate (nondoctoral) courses, but they must complete the usual registration process and pay regular tuition fees. There is no reduction in fees for auditing.

An auditor may participate in class discussions, complete papers and projects, and take tests and examinations for informal evaluation. Regardless of the amount or quality of work completed, however, no academic credit will be granted at any time for audited courses. In addition, audited courses may not be used in the determination of enrollment status for financial aid purposes and do not count toward program completion.

The student's decision to audit a course must be communicated in writing to the Office of the University Registrar before the fourth class meeting for 12-week courses. For 4-, 6-, and 8-week courses, requests must be received by the second class meeting. No exception to this procedure may be approved without the authorization of the college's academic standing committee.

If approved, the student should inform the instructor of his or her status as auditor of the course.

Course Selection and Planning

Students should refer to their degree audits for program curriculum information, to select courses, and to monitor their progress toward degree completion. Students should access their degree audits through their myNortheastern account or request an audit from their student success specialist. Degree audits are unofficial records of academic progress. Students are encouraged to consult with their career and academic coach about their academic planning.

Course Prerequisites

Course prerequisites are courses that are required to have been completed prior to enrolling in another course. Before registering for a course through their myNortheastern account, students, regardless of matriculation status, should consult the College of Professional Studies website (<http://www.cps.neu.edu/degree-programs/prerequisites.php>) to determine whether they have satisfied the course prerequisites.

Course Corequisites

Course corequisites are courses that are required to be taken concurrently. Before registering for a course through their myNortheastern account, students, regardless of matriculation status, should read the course description to determine if there is a corequisite requirement and register for both courses.

Repeating a Course

If a student wishes to improve his or her cumulative grade-point average (GPA) by repeating a course, he or she may do so. A student may take the same course up to three times to earn a better grade. Only the grade earned in the last attempt is used to compute the GPA while all grades remain part of the student's permanent academic record. A student is required to pay the normal tuition charges for all repeated courses. A student may not repeat more than two courses or 8 quarter hours of credit, whichever is greater, to satisfy the requirements of the degree.

Financial aid recipients must be mindful that repeating a course could impact their aid eligibility. Students with questions about this possible impact should contact their financial aid counselor.

Course Waiver

A course waiver may be awarded to a student who has completed the equivalent course at an accredited institution other than the College of Professional Studies in the past five years. The waiver will exempt the student from completing the required course. The student will complete another course, as approved by the program, to satisfy the number of credits required for the program.

Doctoral students must consult with their academic program to determine if course waivers are permitted.

Course Formats and Credits

Visit the College of Professional Studies webpage (<http://www.cps.neu.edu/class-registration/course-formats.php>) for information on course formats.

The College of Professional Studies operates on a quarter credit system and offers courses in a variety of formats.

One quarter credit is equivalent to 0.75 semester credits.

Duration of Courses

Each full fall, winter, and spring term runs for 12 weeks. Each full summer term runs for 8 weeks.

Course durations are as follows:

- During the fall, winter, and spring terms, courses are scheduled for either 6 or 12 weeks.
- During the summer term, courses are scheduled for 4, 6, or 8 weeks.

Course Add/Drop Policy

Refer to the academic calendar (<http://www.northeastern.edu/registrar/calendars.html>) for specific dates.

Students may add a 4-week or 6-week course within the first week of the course. For 8- and 12-week courses, students may add a course within the first 2 weeks of the course.

Students who drop a course before the deadline will not be charged for the course and will not have a W (withdrawal) on their transcript. Thereafter, students are responsible for 100 percent of the tuition charges and applicable fees and the earned grade will be on the students'

permanent academic record. All such dates are specified in the academic calendar.

Students must add/drop courses using their myNortheastern account.

A reduction in a student's course load could affect a student's international student visa status or financial aid eligibility.

Students who experience difficulty adding or dropping a course should promptly email (registrar@northeastern.edu) the Office of the University Registrar. If it is determined that there is an issue with the student's myNortheastern account or access, he or she needs to contact the Service Desk at 617.373.4357 (HELP); help@northeastern.edu.

Students with holds (e.g., financial, judicial), may have restricted access to add, drop, or withdraw from a course. In such instances, students are responsible for resolving the hold immediately and to meet the established course registration deadlines.

Course Withdrawal Policy

Refer to the academic calendar (<http://www.northeastern.edu/registrar/calendars.html>) for specific dates.

Students who withdraw from a course after the add/drop deadline and before the last day to withdraw will receive a W grade and will be responsible for 100 percent of the tuition charges and applicable fees. The W grade does not affect the calculation of the GPA but it does impact a student's academic progression, which may result in the student being placed on academic probation or dismissal.

Students must withdraw from courses using their myNortheastern account.

A reduction in a student's course load could affect a student's international student visa status or financial aid eligibility.

Students who experience difficulty withdrawing from a course should promptly contact the Service Desk at 617.373.4357 (HELP); help@northeastern.edu.

Students who fail to withdraw from a course by the deadline, regardless of their level of class participation or attendance, are financially and academically responsible. A student's lack of participation/attendance will likely result in a final grade of F.

All students are encouraged to consult with their career and academic coach prior to withdrawing from a course. Withdrawals may impact a student's time to degree completion.

Student Evaluation of Courses (EvaluationKit)

Students play a critical role in the university's commitment to quality teaching and academic excellence when they participate in the evaluation of courses through EvaluationKIT, an online survey students complete anonymously at the completion of a course. Students are expected to participate in EvaluationKIT with constructive feedback that is relevant to teaching and course content.

Students may access EvaluationKIT summary results from previous terms via their myNEU web portal (<http://www.myneu.neu.edu>). Courses with a response rate of less than 20 percent of enrolled students will be excluded from the results. Courses with three or fewer students enrolled are not surveyed.

Academic Progression Standards

Academic Progress/Standing

To be in good standing, a graduate student must continuously maintain a minimum cumulative grade-point average (GPA) of 3.000 on a 4.000 scale and must also make continuous satisfactory academic progress (SAP). To make SAP, a student must earn at least 66 percent of his or her cumulative attempted credits. Nonmatriculated students are required to be in good academic standing to be allowed to register for any subsequent classes.

Students are responsible for reviewing their grades and academic standing at the end of each term through their myNortheastern account. If there are any discrepancies, students should immediately contact the instructor(s) directly. Students who want to appeal a grade have 20 working days from the date the grade is posted to do so.

Academic Probation and Dismissal

Notation of academic probation appears on a student's internal record but not on his or her permanent transcript.

With exception as specified by the program, a graduate (nondoctoral) student is placed on academic probation if his or her cumulative GPA is below 3.000 and/or if he or she does not earn at least 66 percent of his or her cumulative attempted credits. The student is strongly encouraged to consult with his or her career and academic coach to develop an individualized success plan (ISP) to improve his or her academic standing. Otherwise, a registration hold may be placed on the student's account.

A student whose cumulative GPA remains below 3.000, and/or does not earn at least 66 percent of his or her cumulative attempted credits in the term of enrollment subsequent to the one after he or she was placed on academic probation, will be academically dismissed. A student who has been academically dismissed from the college is automatically dismissed from his or her program of study.

Dismissal Notification

A student will be notified about his or her dismissal and has the right to appeal the dismissal decision to the college's academic standing committee if he or she can provide documented evidence supporting an appeal. The notification will include the appeal deadline.

Students are responsible for reviewing their grades and academic standing at the end of each term through their myNortheastern account.

Reinstatement after Academic Dismissal

A student who is academically dismissed from the college is not eligible to register again for courses at this college until he or she is approved for reinstatement. A student may apply for reinstatement after a minimum of one academic year if he or she can provide documented evidence supporting the application (e.g., completed two graduate courses with a grade of B or higher at another accredited college or relevant professional development opportunities during the one-plus year absence). The application must be made in writing by submitting the appropriate form and providing supporting documentation to the Office of Academic Advising (<http://www.cps.neu.edu/student-resources/OAA.php>).

If reinstatement to the college is approved, a student is expected to meet the most current requirements for program admissions and curriculum.

A student approved for reinstatement but who does not meet the admissions requirements for the intended program of study, or if the intended program of study is no longer available, may apply to another program.

Students reinstated must achieve good academic standing in the first term of reinstatement.

Completing Degree Requirements

Graduate and Doctoral Degree Programs

To earn a graduate or doctoral degree, students must complete all courses as prescribed in the curriculum; the required number of credits as per the curriculum; applicable thesis or dissertation; the residency requirement; and maintain a minimum cumulative grade-point average (GPA) of 3.000 or as outlined by the specific program.

Graduate Certificate Programs

To earn a graduate certificate, students must complete all courses as prescribed in the curriculum; the required number of credits as per the curriculum; the residency requirement; and maintain a minimum cumulative GPA of 3.000 or as outlined by the specific program.

Time Limit on Courses

Graduate course credits earned in the academic program or accepted by transfer are valid for a maximum of seven years.

Time Limit on Program Completion

- Graduate certificate students have up to three full years from the time of the first term of enrollment to complete the program.
- Master's degree students have up to seven full years from the time of the first term of enrollment to complete the program.
- Doctoral degree students, with the exception of the Transitional Doctor of Physical Therapy, have up to seven full years from the time of the first term of enrollment to complete the program.
- Transitional Doctor of Physical Therapy students who begin their program in the fall 2014 term or thereafter have up to four full years from the time of the first term of enrollment to complete the program.

Note: The College of Professional Studies makes adjustments to its academic program offerings and curricula to stay current and to be able to offer students the most relevant courses and knowledge in the field. Examples of such changes include adding new programs, adding/adjusting course requirements, adding/adjusting courses, and adding/adjusting curriculum requirements.

When there is a change to a curriculum or program requirement, students already matriculated and actively enrolled in the program may continue to follow the program requirements at the time of matriculation or to follow the new curriculum/program requirements, unless it is otherwise specified by the academic program at the time of the announcement of said changes.

Degrees, Majors, and Concentrations

Change of Major/Program of Study

A graduate (nondoctoral) student matriculated in a certificate/degree program who would like to enroll in a different graduate program, after consulting with their career and academic coach, must apply to the intended program by submitting the Change of Major form.

Previously awarded transfer credit awards are subject to change as a result of a program change. Students on financial aid or an international student visa are responsible for understanding the impact that results from a program change.

Doctoral students must consult with their program director or designee.

Declare a Concentration

Graduate and doctoral students matriculated in a degree program that offers concentrations must declare one concentration. This can be done at the time of application to the program as part of the admissions process. Students also may complete the appropriate form in consultation with their career and academic coach or academic program designee. Students who wish to pursue a customized specialization must seek prior approval from the academic program director.

Only university-approved concentrations are noted on students' official academic records. If a student pursues a customized specialization, no concentration will be noted on his or her official academic transcript.

Students must declare a concentration by the beginning of their last term of enrollment for degree completion.

Academic Internship and Cooperative Education

An academic internship or cooperative education placement is an opportunity for students to engage in a short-term workplace experience that is relevant to their academic course of study. The College of Professional Studies' Department of Cooperative Education (<http://cps.northeastern.edu/experiential-learning/coops>) makes every effort to work with students to identify experiential learning opportunities of three to six months to facilitate career exploration and transition. This program is an optional component of most degree programs. Students must qualify to participate. Review the website (<http://cps.northeastern.edu/experiential-learning/coops>) for guidelines, academic requirements, and opportunities.

Seeking more than One Certificate or Degree

A graduate (nondoctoral) student can be enrolled in only one graduate program at a time.

Graduate (nondoctoral) students seeking more than one certificate or degree after having completed a program should note that graduate credits earned toward:

1. A degree at any institution may not be used to satisfy the requirements of another graduate program.
2. A degree earned at the College of Professional Studies may be used to satisfy the requirements of a graduate certificate with a cap of 50 percent of the required credits of a graduate certificate, if the contents are determined to be applicable per the program director and if the credits were earned within seven years of pursuit of the certificate.
 - a. If the same course is required in the degree and certificate programs and the student has exceeded the maximum number of credits that can be applied in the certificate program, he or she may request a course waiver to be permitted to take another course instead of repeating the course. See Course Waiver section.
3. With specified exception, a certificate earned at the College of Professional Studies may be used to satisfy the requirements of a graduate degree, if the contents are determined to be applicable per the program director and if the credits were earned within seven years of pursuit of the degree.

4. A certificate earned at the College of Professional Studies may be used to satisfy the requirements of a second certificate with a cap of one course of no more than 4 credits, if the contents are determined to be applicable per the program director and if the credits were earned within seven years of pursuit of the certificate.
 - a. If the same course is required in both certificate programs and the student has exceeded the maximum number of credits that can be applied in the second certificate program, he or she will request a course waiver to be permitted to take another course instead of repeating the course. See Course Waiver section.
5. A certificate earned at another accredited institution may be accepted as transfer credits to satisfy the requirements of a graduate degree with a cap of four 3-credit courses or three 4-credit courses (no more than 12 credits), if the contents are determined to be applicable per the program director and if the credits were earned within seven years of pursuit of the degree.

A graduate (nondoctoral) degree student who wishes to pursue a graduate certificate concurrently may seek admission in the certificate program by the end of his or her first term of matriculation in the degree program. Courses that satisfy requirements for both the degree and certificate will count for each.

- When the certificate is identical to a concentration in a degree program, only the certificate credential will be earned. The student's transcript will not indicate completion of a concentration

A doctoral student can be enrolled in only one program at a time and may not seek an additional certificate or degree.

Graduation Requirements

Graduation Procedures

Only students who complete the graduation application process by specified deadlines will be considered for graduation and included in the graduation ceremony program. All qualified students must submit a graduation application in order to receive their diploma, regardless of whether they plan to attend the graduation ceremony.

Note important definitions: "Degree conferral date" and "graduation ceremony date" do not mean the same thing. Degree conferral date refers to the date of the university's official recognition of degree completion. For the purposes of the graduation application, that is accessed via a student's myNortheastern account. The "expected graduation date" (EGD) is the same as the degree conferral date. Northeastern University confers degrees four times each academic year: winter, spring, summer, and fall. The graduation ceremony date is the date that the college hosts the annual graduation ceremony.

To qualify for winter degree conferral, a student must satisfy all degree requirements by the end of the previous fall quarter. To qualify for spring degree conferral, a student must satisfy all degree requirements by the end of the previous winter quarter. To qualify for summer degree conferral, a student must satisfy all degree requirements by the end of the previous spring quarter. To qualify for fall degree conferral, a student must satisfy all degree requirements by the end of the previous summer quarter.

Doctoral candidates must be mindful of additional deadlines to complete their dissertation/thesis in time to be eligible for degree conferral and participation in a doctoral hooding and a graduation ceremony.

Each fall, the Office of the Registrar sends an email notification to students who may be eligible to graduate that academic year about

applying to graduate. Eligibility is based on the number of earned credits at the beginning of the fall term. This email notification informs and instructs students to complete the “Apply to Graduate” process, accessed via their myNortheastern account. Students are prompted to verify and provide critical information, e.g., spelling of the student’s name on the diploma, intent to participate in the graduation ceremony, and mailing address.

An accurate EGD is required to gain access to the graduation application. The EGD is also used by clearinghouses to determine loan deferment schedules. If your EGD is not correct, contact your designated learner services specialist.

For more information, visit the College of Professional Studies Graduation web page (<http://www.cps.neu.edu/student-resources/graduation>).

Diploma

The following rules apply to the diploma.

- Information that will be printed on diplomas:
 - Major for only nonspecified degrees (Master of Arts, Master of Science).
- Changes made to a student’s name after the diploma has been printed may be subject to a \$50 fee and take more than one month to reprint.
- Changes made to a student’s degree information and name submitted after the program deadline will not be noted in the graduation ceremony program. If a diploma was previously printed, it will need to be reprinted and can take more than one month.

Global Partnership Programs

Students enrolled in a College of Professional Studies’ global partnership or a dual-degree program are required to abide by the policies and procedures of both institutions or as specified in their program.

Dual-degree candidates must apply to graduate at each institution by following each institution’s policies and procedures.

Accommodations for Students with Disabilities

Northeastern University and the Disability Resource Center (DRC) are committed to providing disability services that enable students who qualify under Section 504 of the Rehabilitation Act and the Americans with Disabilities Act Amendments Act (ADAAA) to participate fully in the activities of the university. To receive accommodations through the DRC, students must provide appropriate documentation that demonstrates a current substantially limiting disability. Accommodations are provided based on an evaluation of the information provided by students and their clinicians, on a case-by-case basis. These services are available for, but not limited to, students with the following diagnoses:

- Learning disabilities and/or AD(H)D
- Autism spectrum disorders
- Chronic or degenerative disorders
- Hearing loss
- Mobility impairments
- Psychiatric disorders
- Traumatic or acquired brain injury
- Vision impairments

Students should provide documentation to the DRC at their earliest convenience to allow for sufficient time for review. After the documentation has been reviewed, a disability specialist will contact the student regarding appropriate next steps. Visit the DRC website (<http://www.northeastern.edu/drc>) for additional information or contact staff at 617.373.2675.

Personal Information

Change of Name

Report all name changes to the Office of the Registrar immediately. This is especially important when students marry and wish to use a new name on university records. Official documentation of the name change is required.

Change of Address

Report all address changes via the myNortheastern web portal (<http://myneu.neu.edu>) or in person at the Office of the Registrar or Office of Student Accounts. Both the permanent home address and the local address are required. International students must also report any changes of address to the Office of Global Services (OGS) within 10 days in order to ensure compliance with Student and Exchange Visitor Information System (SEVIS) requirements.

Graduate Campus

Students enrolled in a Northeastern University graduate (regional) campus are also required to abide by the policies and procedures specific to that campus.

Doctoral Degree Programs

Guided by industry leading faculty, our innovative **doctoral programs** combine cutting-edge course work with professionally relevant research projects. These programs will provide you with the opportunity to earn the policy, research, and administrative foundation necessary to advance to the top of your career.

Programs

Doctor of Education (EDD)

- Education (p. 308)

Doctor of Law and Policy (DLP)

- Law And Policy (p. 311)

Transitional Doctor of Physical Therapy (DPT)

- Physical Therapy (p. 311)
- Physical Therapy—Direct Entry (p. 312)

Education, EDD

The Doctor of Education (EdD) program offers a rich, dynamic learning experience—one that blends critical engagement with theory, practice, and research.

Offering innovative and engaging opportunities, our EdD seeks to further cultivate the skills and knowledge necessary to effect meaningful change in your organization. As a Doctor of Education student, you have an opportunity to collaborate with an accomplished group of fellow

practitioners, exposing you to global perspectives and strengthening your ability to think critically about today's educational challenges.

Built on Northeastern University's scholar-practitioner model, the EdD program integrates your professional experience with doctoral-level research, which should enable you to identify and address your practice-based issues while investigating matters of social justice. Through rigorous course work and collaborative experiences, you have an opportunity to conduct empirical research culminating in a doctoral thesis that examines a compelling educational challenge.

Admission Requirements

Note that all Doctor of Education degrees offered through the College of Professional Studies have the following admission requirements:

- Online application
- Academic transcripts (undergraduate **and** graduate)
- Admissions statement (1,000–1,200 words)
- Minimum of three years of professional work experience in a related field
- Professional resumé
- Faculty recommendation
- Two professional recommendations
- English-language proficiency proof (for non-native English-language speakers)

Curriculum, Teaching, Learning, and Leadership Concentration

The Doctor of Education with Concentration in Curriculum, Teaching, Learning, and Leadership helps educational leaders develop the competencies, dispositions, and values required to pursue educational reform, based on a commitment to social justice. Students explore the relationship between effective educational leadership and the ways that curriculum and teaching can enhance learning opportunities for students across their life span.

This EdD concentration focuses on preparing transformational leaders who recognize the importance of providing quality educational experiences for all learners.

Key learning objectives include how to:

- Assess how issues of social justice play out in contemporary educational settings
- Analyze education systems to gain an understanding of the evolution of micro- and macrolevel policies and legislation
- Examine international curriculum and instruction research and practices
- Investigate the development and interaction of leadership roles within organizations
- Explore the theoretical and historical dimensions of curriculum, teaching, and learning in varied educational settings

Higher Education Administration Concentration

The Doctor of Education with Concentration in Higher Education Administration includes the study of practice and scholarship within all sectors of postsecondary education including community colleges, four-year colleges, for-profit institutions, and research universities. The increased globalization of higher education is addressed throughout the program. The concentration allows experienced educators and administrators to reflect on and advance their knowledge in ways that

will enhance their ability to make a contribution to higher education and further their careers.

This concentration offers students an opportunity to conduct research that addresses critical issues in higher education. This concentration seeks to produce graduates well-grounded in the educational roles and critical issues in colleges and universities, including:

- Cultural, ethical, and societal issues in higher education
- Historical considerations in higher education around the world
- Organization, governance, leadership, and administrative theories
- Higher education finance, law, and planning
- Establishing and sustaining initiatives in higher education

Organizational Leadership Studies Concentration

The Doctor of Education with Concentration in Organizational Leadership Studies positions experienced leaders to assume greater responsibilities within their organizations. Designed for leaders working in educational, government, healthcare, military, not-for-profit, for-profit, and management consulting organizations, this concentration combines theory, research, and practice to develop individuals who can effectively manage and lead change in today's fast-paced, global environment.

The interdisciplinary curriculum offers a strong foundation in leadership, culture, learning, change, communications, systems, and strategy. Students have an opportunity to conduct and apply doctoral research to develop real-world answers to the leadership challenges facing 21st-century organizations.

Throughout the course of the program, students have an opportunity to:

- Review contemporary leadership theory and models emphasizing recent conceptualizations such as adaptive, relational, distributed, complexity, and global leadership to refine their personal leadership knowledge, skills, and abilities
- Examine key models of organizational culture to build their own capability to understand and interact with different societal and organizational cultures across the world
- Enhance their ability to think systemically by developing the required competencies to create cultures and structuring processes for learning in their organizations
- Explore classical and modern theories of organization and design a forward-thinking organization creating all components, including vision, mission, strategy, structure, and processes
- Use both seminal and current theoretical approaches of organizational communication to investigate the dynamic interplay between communication processes and human organizing
- Examine seminal and modern group dynamics research to assess group processes and to stimulate group development inside their organizations
- Investigate topical consulting strategies and organizational assessment tools and conduct an organizational diagnosis to gain a comprehensive understanding of the models, variables, and perspectives used to understand complex organizational processes
- Integrate organizational power theory, research, and practical diagnostic tools to systematically identify and evaluate the political processes and behaviors at play inside their organizations

This program seeks to produce graduates who have the capacity to contribute new knowledge to leadership scholarship and become positive forces of change.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Note: A minimum of 51 quarter hours must be taken at the College of Professional Studies.

Required Foundation Courses

Code	Title	Hours
EDU 7209	Introduction to Doctoral Studies	3
EDU 7214	Changing Conceptions of Learning and Human Development: Research and Practice	3
EDU 7210	Leadership Theory and Research	3

Required Research Courses

Code	Title	Hours
EDU 7280	Fundamentals of Research	3
EDU 7281	Research Design	3
EDU 7294		3
EDU 7295	Dissertation in Practice Seminar	3

Concentration

Complete one of the following concentrations:

- Curriculum, Teaching, Learning, and Leadership
- Higher Education Administration
- Organizational Leadership Studies

Program Credit/GPA Requirements

60 total quarter hours required

Minimum 3.000 GPA required

CURRICULUM, TEACHING, LEARNING, AND LEADERSHIP

Code	Title	Hours
Required Courses		
EDU 7244	Curriculum Theory and Practice Over Time: Implications for Educational Leadership	3
EDU 7216	Social Justice and Educational Equity	3
EDU 7217	Educational Systems: The Dynamics between Policy, Values, and Practice	3
EDU 7242	Situated Leadership	3
EDU 7213	Education Entrepreneurship	3
Elective Courses		
Complete 12 quarter hours in the following range:		12
EDU 7000 to EDU 7999		
Doctoral Thesis Courses		
EDU 8796	Thesis Proposal and the Internal Review Board	0
EDU 8797	Thesis Data Collection, Initial Analysis, and Management	0
EDU 8798	Thesis Data Analysis and Presentation	0
EDU 8799	Thesis Findings and Discussion	12

HIGHER EDUCATION ADMINISTRATION

Code	Title	Hours
Required Courses ¹		
EDU 7204	Global and Historical Perspectives on Higher Education	3
EDU 7250	Organizational Systems and Institutional Governance	3
EDU 7253	The Legal Environment of Higher Education	3
EDU 7256	Financial Decision Making in Higher Education	3
EDU 7258	Strategic Management in Higher Education	3
Elective Courses ²		
Complete 12 quarter hours in the following range:		12
EDU 7000 to EDU 7999		
Doctoral Thesis Courses		
EDU 8796	Thesis Proposal and the Internal Review Board	0
EDU 8797	Thesis Data Collection, Initial Analysis, and Management	0
EDU 8798	Thesis Data Analysis and Presentation	0
EDU 8799	Thesis Findings and Discussion	12

¹ Students who choose to pursue the **international higher education track within the higher education administration concentration** should complete (EDU 7260) and (EDU 7261) rather than Financial Decision Making in Higher Education (EDU 7256) and Strategic Management in Higher Education (EDU 7258)

² Students who choose to pursue the **international higher education track within the higher education administration concentration** should complete Educating Global Students: Issues and Practices (EDU 7264) as an elective.

ORGANIZATIONAL LEADERSHIP STUDIES

Code	Title	Hours
Required Courses ³		
EDU 7278	Organization Theory and Design	3
EDU 7277	Organizational Learning and Systems Thinking	3
EDU 7276	Organizational Communication: Institutional and Global Perspectives	3
EDU 7272	Global Perspectives of Organizational Culture	3
EDU 7275	Contemporary Models of Leadership	3
Elective Courses ⁴		
Complete 12 quarter hours in the following range:		12
EDU 7000 to EDU 7999		
Doctoral Thesis Courses		
EDU 8796	Thesis Proposal and the Internal Review Board	0
EDU 8797	Thesis Data Collection, Initial Analysis, and Management	0
EDU 8798	Thesis Data Analysis and Presentation	0
EDU 8799	Thesis Findings and Discussion	12

³ Students who choose to pursue the **sports leadership track within the organizational leadership concentration** should complete Contemporary Models of Sports Leadership (EDU 7290) rather than Contemporary Models of Leadership (EDU 7275).

⁴ Students who choose to pursue the **sports leadership track within the organizational leadership concentration** should complete Personnel Development in Sports Leadership (EDU 7291), Social Justice in Sports (EDU 7292), and Legal and Ethical Issues in Sports Leadership (EDU 7293) as electives.

Law And Policy, DLP

Public servants, executives, and managers operate in an increasingly complex global environment. A doctoral education seeks to provide the policy, analytic, and research skills necessary to advance one's career.

Developed jointly by the College of Professional Studies and Northeastern's Law and Public Policy program, the Doctor of Law and Policy program (DLP) is designed for experienced professionals who are interested in the origins, development, implementation, and analysis of legal and public policy decisions in government and related institutions. The program prepares students to advance their careers within a variety of fields while focusing their thesis research on a precise law and policy topic.

Students undertake the DLP in order to understand the ways in which public and related institutions formulate and execute policy. Students have the opportunity to develop the ability to interpret and assess the research of others, to acquire skills as researchers, and to communicate their knowledge to a wide range of audiences. Those who successfully complete the degree are equipped to bring their skills and knowledge to senior policy and management positions in government, nonprofit agencies, research organizations, consulting firms, and corporations.

The DLP program is structured so course work and the doctoral thesis can be completed in two years. Classes meet one weekend per month in Boston, and the learning continues online throughout the rest of the month.

Northeastern University also offers a traditional PhD in Law, Policy, and Society. To learn more, visit the Law and Public Policy program website (<http://www.northeastern.edu/cssh/policyschool/law-public-policy-phd>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LWP 6118	Historical Foundations of American Law	2
LWP 6119	Current Law and Policy Debates: Our Nation's Capital and Beyond	2
LWP 6120	Law and Legal Reasoning 1	2
LWP 6401	Law and Policy Concepts 1: The Policy Making Process	2
LWP 6424	Research Methods	2
LWP 6121	Law and Legal Reasoning 2	2
LWP 6402	Law and Policy Concepts 2: Strategizing for Public Policy	2
LWP 6423	Qualitative Methods	2
LWP 6122	Law and Legal Reasoning 3	2

LWP 6403	Law and Policy Concepts 3: Policy Case Studies	2
LWP 6420	Quantitative Methods	2
LWP 6123	Law and Legal Reasoning 4	2
LWP 6410	Economics for Policy Analysis	2
LWP 6404	Evaluation Research	2
LWP 6431	Political and Moral Ethics and Dilemmas	2
LWP 6500	Doctoral Research Design 1	2
LWP 6450	Public Policy Theory and Practice 1	2
LWP 6501	Doctoral Research Design 2	2
LWP 6451	Public Policy Theory and Practice 2	2
LWP 6502	Doctoral Research Design 3	2
LWP 6452	Public Policy Theory and Practice 3	2
LWP 6503	Doctoral Research Design 4	6

Program Credit/GPA Requirements

48 total quarter hours required
Minimum 3.000 GPA required

Transitional Doctor of Physical Therapy, DPT

Designed for practicing physical therapists, the transitional Doctor of Physical Therapy (DPT) is an innovative, 100 percent online program. Integrating art and science, as well as professional and experiential learning, this curriculum seeks to provide you with the necessary knowledge base for today's practitioners with an earned doctoral degree.

Core courses within this physical therapy doctoral program include differential diagnosis and medical screening, diagnostic imaging, pharmacology, nutrition, and motor control. The capstone course, Comprehensive Case Analysis (PTH 6900), is a culmination of all work within the transitional DPT curriculum. Students have an opportunity to prepare a comprehensive and publishable case report or other scholarly work in partial fulfillment of the requirement for a transitional DPT degree.

The transitional DPT also includes specializations in a variety of areas such as orthopaedics, pediatrics, geriatrics, advanced nutrition, women's health, education, and business management. If you have a unique specialization interest, you may also complete a directed study on a preapproved topic of your choosing.

Credit Requirement

The transitional DPT degree is built upon a core of six courses. Beyond the common core, requirements may vary depending on whether the physical therapist is MSPT or BSPT prepared in addition to the student's past experiences.

For students entering with a Master of Science in Physical Therapy, 26 quarter hours are required.

Residents of the state of North Carolina must have an earned master's degree to be eligible for admission to the transitional Doctor of Physical Therapy program.

For students entering with a Bachelor of Science in Physical Therapy, 35 quarter hours are required.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Note: 26 quarter hours are required for students entering with a Master of Science in Physical Therapy.

Core Requirements

Code	Title	Hours
Required Core		
PTH 6100	Differential Diagnosis and Medical Screening	4
PTH 6110	Diagnostic Imaging	4
PTH 6130	Pharmacology	3
PTH 6900	Comprehensive Case Analysis	4
PTH 6140	Motor Control	4
Nutrition		
Complete one of the following:		3-4
PTH 6120	Clinical Nutrition	
NTR 6120	Healthy Aging: Nutrition Strategies for Optimal Longevity	
NTR 6119	Pediatric Nutrition	
NTR 7147	Sports and Fitness Nutrition	

Elective

Code	Title	Hours
Complete one of the following:		4-5
PTH 6430	Educational Strategies for Effective Healthcare Delivery	
PTH 6480	Evidence-Based Exercise for the Older Adult	
PTH 6490	Pediatric Physical Therapy: Emerging Topics and Evidence-Based Practice	
PTH 6200	Research Methods and Statistical Analysis	
PTH 6235	Administrative and Management Keys for Contemporary Physical Therapist Practice	
PTH 6561	Evidence-Based Examination and Outcomes for the Cervical-Thoracic Spine and Temporomandibular Joint	
PTH 6563	Evidence-Based Examination and Outcomes for Lumbar Spine and Sacroiliac Joint	
PTH 6564	Evidence-Based Examination and Outcomes for Lower Extremity: Hip, Knee, Foot, and Ankle	

Program Credit/GPA Requirements

26 total quarter hours required
Minimum 3.000 GPA required

Transitional Doctor of Physical Therapy, DPT—Direct Entry

Designed for practicing physical therapists, the **transitional Doctor of Physical Therapy (DPT) is an innovative, 100 percent online program.** Integrating art and science, as well as professional and experiential education, the degree curriculum provides you with the necessary knowledge base for today's doctorally prepared practitioners.

Core courses within this physical therapy doctoral program include differential diagnosis and medical screening, diagnostic imaging, pharmacology, nutrition, and motor control. The capstone course,

Comprehensive Case Analysis (PTH 6900), is a culmination of all work within the transitional DPT curriculum. Students will prepare a comprehensive and publishable case report or other scholarly work in partial fulfillment of the requirement for a transitional Doctor of Physical Therapy Degree.

The transitional Doctor of Physical Therapy also includes concentrations in a variety of areas such as orthopaedics, pediatrics, geriatrics, advanced nutrition, women's health, education, and business management. If you have a unique concentration interest, you may also complete a directed study on a preapproved topic of your choosing.

Note: Degree requirements differ for North Carolina students. For more information, visit the Northeastern University—Charlotte website (http://www.northeastern.edu/charlotte/academic_program/transitional-doctor-of-physical-therapy).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Note: 35 quarter hours are required for students entering with a Bachelor of Science in Physical Therapy.

Required Courses for all Students

Code	Title	Hours
PTH 6100	Differential Diagnosis and Medical Screening	4
PTH 6110	Diagnostic Imaging	4
PTH 6130	Pharmacology	3
PTH 6900	Comprehensive Case Analysis (All students should complete 14 credits including PTH 6100 prior to enrolling in PTH 6900)	4
PTH 6140	Motor Control	4
PTH 6200	Research Methods and Statistical Analysis	5

Required Nutrition Course

Code	Title	Hours
Complete one of the following:		3-4
PTH 6120	Clinical Nutrition	
NTR 6120	Healthy Aging: Nutrition Strategies for Optimal Longevity	
NTR 6119	Pediatric Nutrition	
NTR 7147	Sports and Fitness Nutrition	

Additional Required Elective for BS Entry Students

Code	Title	Hours
Complete one of the following:		4
PTH 6235	Administrative and Management Keys for Contemporary Physical Therapist Practice	
PTH 6430	Educational Strategies for Effective Healthcare Delivery	

Elective Course

Code	Title	Hours
Complete one of the following:		
PTH 6430	Educational Strategies for Effective Healthcare Delivery	4-5
PTH 6480	Evidence-Based Exercise for the Older Adult	
PTH 6490	Pediatric Physical Therapy: Emerging Topics and Evidence-Based Practice	
PTH 6200	Research Methods and Statistical Analysis	
PTH 6235	Administrative and Management Keys for Contemporary Physical Therapist Practice	
PTH 6561	Evidence-Based Examination and Outcomes for the Cervical-Thoracic Spine and Temporomandibular Joint	
PTH 6563	Evidence-Based Examination and Outcomes for Lumbar Spine and Sacroiliac Joint	
PTH 6564	Evidence-Based Examination and Outcomes for Lower Extremity: Hip, Knee, Foot, and Ankle	

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- Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Regulatory Compliance (p. 347)
- Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Strategic Regulatory Affairs (p. 348)
- Regulatory Affairs of Food and Food Industries (p. 350)
- Respiratory Care Leadership (p. 350)
- Technical Communication (p. 351)

Program Credit/GPA Requirements

35 total quarter hours required

Minimum 3.000 GPA required

Master's Degree Programs

Representing in-demand fields such as education, technology, project management, and regulatory affairs, our **master's degree programs** are grounded in theory and applied in practice. Programs may be taken part-time or full-time, online, or on campus, providing you maximum flexibility and convenience for your busy schedule.

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Homeland Security, MA

The Master of Arts in Homeland Security is intended to prepare the next generation of emergency managers and homeland security professionals for leadership roles in the public and private sectors. The degree offers a comprehensive program of studies covering core elements of homeland security and emergency management at the graduate level, including management skills, intelligence gathering and analysis, risk management, emergency planning and management, legal issues, technological issues, and social psychology. The master's in homeland security program is designed to develop high-level operational expertise through the application of the above content to the implementation of emergency response protocols as executed in the United States.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HLS 6000	Introduction to Homeland Security	3
HLS 6010	The Unconventional Threat to Homeland Security	3
HLS 6020	Technology for Homeland Security	3
HLS 6030	Intelligence for Homeland Security	3

HLS 6040	Critical Infrastructure: Vulnerability Analysis and Protection	3
HLS 6050	Multidisciplinary Approaches to Homeland Security	3
CMN 6050	Crisis Communication	3

Capstone/Thesis

Code	Title	Hours
Complete one of the following:		
HLS 6983	Topics in Homeland Security	4
HLS 7990	Thesis (Please Note: Student that are interested in taking HLS 7990 need to first take GST 6109 Basic Field Research)	4

Concentration

Complete one of the following concentrations:

CONCENTRATION IN EMERGENCY MANAGEMENT

Code	Title	Hours
HLS 6060	Strategic Planning and Budgeting	3
HLS 6070	Emergency Management and Geographic Information Systems	3
HLS 6080	Continuity of Operations and Planning	3
HLS 6150	Essentials of Emergency Management	3
HLS 6155	Critical Infrastructure, Security, and Emergency Management	3
HLS 6160	Advanced Emergency Management	3

CONCENTRATION IN GEOSPATIAL SERVICES

Code	Title	Hours
HLS 6060	Strategic Planning and Budgeting	3
HLS 6070	Emergency Management and Geographic Information Systems	3
HLS 6080	Continuity of Operations and Planning	3
GIS 5103	Foundations of Geographic Information Science	4
GIS 6394	Crisis Mapping for Humanitarian Action	3

CONCENTRATION IN ORGANIZATION AND INFRASTRUCTURE CONTINUITY

Code	Title	Hours
CJS 6430	Risk Management	3
HLS 6090	Organization and Structural Continuity Planning	3
GIS 5103	Foundations of Geographic Information Science	4
ITC 6315	Information Security Risk Management	3
ITC 6310	Information Security Governance	3

CONCENTRATION IN PORT SECURITY

Code	Title	Hours
Students selecting this concentration are only required to take 4 quarter hours of electives.		
HLS 6100	Maritime Port Security 1 (recommended taken concurrently with HLS 6120)	4
HLS 6110	Maritime Port Security 2	4

HLS 6120	Aviation Security 1 (recommended taken concurrently with HLS 6100)	4
HLS 6130	Aviation Security 2	4

Elective

Code	Title	Hours
Complete one of the following:		
CJS 6105	Domestic and International Terrorism	3-4
HLS 6035	Advanced Intelligence Applications for Homeland Security	
CJS 6125	Issues in National Security	
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6430	Risk Management	
GST 6300	Security and Terrorism	
CMN 6060	Negotiation, Mediation, and Facilitation	
CJS 6964		
EDU 6184	Interdisciplinary Foundations	
INT 6943	Integrative Experiential Learning	
CJS 5978	Independent Study	
GST 6109	Basic Field Research Methods	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Strategic Intelligence and Analysis, MA

The Master of Arts in Strategic Intelligence and Analysis is designed for students who seek careers in the intelligence field, as well as professionals whose agencies or clientele are charged with the acquisition and interpretation of intelligence. The degree features courses in fundamental intelligence disciplines, such as analysis and epistemology, intelligence collection, and others. Every analyst in the Intelligence Community is expected to be proficient in 6 core competencies. The competencies enumerated by the Director of National Intelligence (DNI) are as follows:

- Engagement and Collaboration
- Critical Thinking
- Personal Leadership and Integrity
- Accountability for Results
- Technical Expertise
- Communication

The program focuses on summarizing psychological theories relevant to critical thinking and analytical techniques, demonstrating knowledge, through examination procedures, of the major theories and research findings in intelligence analysis, becoming familiar with analytical literature through independent reading, and applying analytical techniques and theories to problem sets. The Master's in Strategic Intelligence and Analysis prepares the next generation of intelligence analysts for leadership roles in the public and private sectors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
SIA 6000	Psychology of Intelligence Analysis	4
SIA 6010	Intelligence Operations Management	4
SIA 6020	Globalization and Intelligence Issues	4
SIA 6030	Intelligence Analysis and Policy Relationship	4
CJS 6125	Issues in National Security	3

Capstone

Code	Title	Hours
Complete one of the following:		4
SIA 6983	Topics in Strategic Intelligence and Analysis	
SIA 7990	Thesis (Please Note: Students that are interested in taking SIA 7990 need to first take and pass GST 6109 Basic Field Research)	

Concentrations

Complete one of the following concentrations:

ANALYSIS FOR HOMELAND SECURITY

Code	Title	Hours
HLS 6030	Intelligence for Homeland Security	3
HLS 6020	Technology for Homeland Security	3
HLS 6010	The Unconventional Threat to Homeland Security	3
HLS 6050	Multidisciplinary Approaches to Homeland Security	3
GST 6300	Security and Terrorism	4

INTELLIGENCE COMMUNITY OPERATIONS AND ANALYSIS

Code	Title	Hours
SIA 6040	Interagency Collaboration	4
SIA 6050	All-Source Intelligence	4
SIA 6060	Human Intelligence Operations	4
SIA 6070	Analysis for Counterterrorism	4

REMOTE SENSING

Code	Title	Hours
Required Courses		
RMS 5105	Fundamentals of Remote Sensing	3
RMS 6110	Digital Image Processing	3
Electives		
Complete four of the following:		12
RMS 6215	Unmanned Aerial Systems for Geospatial Analysts	
RMS 6230	Remote Sensing and Global Change	
RMS 6240	Introduction to Radar and LiDAR Remote Sensing	
RMS 6250	Spatial Analytics for Vegetation and Precision Agriculture	
RMS 6260	Remote Sensing for Archaeology	
RMS 6270	Remote Sensing for Disaster Management	
RMS 6280	Automated Feature Extraction for the Geospatial Professional	

RMS 6290	Spectroscopic Image Analysis
RMS 6292	Photogrammetry and GPS
GIS 6394	Crisis Mapping for Humanitarian Action

Electives

Code	Title	Hours
Complete 6–8 quarter hours from the following:		6-8
SIA 6080	Culture and Psychology	
SIA 6110	Law and Psychology	
SIA 6090	Intelligence Collection	
GST 6300	Security and Terrorism	
ITC 6300	Foundations of Information Security	
CJS 6430	Risk Management	
EDU 6184	Interdisciplinary Foundations	
SIA 6100	Leadership for Intelligence Professionals	
GST 6109	Basic Field Research Methods	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Teaching, Elementary Licensure, MAT

Designed for aspiring teachers and career changers, the Master of Arts in Teaching in Elementary Education (MAT)¹ offers an appreciation for and an understanding of the diverse educational needs, social concerns, and cultural values of today's elementary and secondary schools. This graduate degree in teaching seeks to enhance your foundational skills, broaden your perspectives, and strengthen your ability to inspire and educate. The master's degree, which includes a full term of student teaching, seeks to produce graduates well positioned to make a meaningful impact in their school, in their community, and in the lives of their students.

¹ The MAT (grades 1–6) has been approved at the initial licensure level by the Massachusetts Department of Elementary and Secondary Education.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6051	Culture, Equity, Power, and Influence	4
EDU 6086	Foundations of Literacy Development and Instruction	4
EDU 6104	Child and Adolescent Development, Learning, and Teaching	4
EDU 6107	Inclusion, Equity, and Diversity	4
EDU 6154	Inquiry in the Sciences and Humanities	4
EDU 6155	Inquiry in Mathematics	4
EDU 6185	English-Language Learners in the General Education Classroom	4
EDU 6183	Collaborative Strategies for Effective Classroom Management	1
EDU 6866	Teaching Practicum and Seminar	1-8

Elective Courses

Code	Title	Hours
Complete 8 quarter hours from the following:		8
EDU 6023	Institute in Creating a Community of Learners/Behaviors	
EDU 6184	Interdisciplinary Foundations	
EDU 6300	Introduction to Language and Linguistics	
EDU 6425	Special Education: Role of Special Educators in an Inclusive School	
EDU 6426	Developmental Language, Literacy, and Writing: Assessment and Instruction	
EDU 6429	Variations in Child and Adolescent Development	
EDU 6437	Assessment in Education	
EDU 6438	Teachers as Curriculum Leaders	
EDU 6465	Critical and Creative Thinking	
EDU 6516	Sheltered English Instruction and Assessment	
EDU 6520	Learning and the Brain: Translating Research into Practice	
EDU 6528	Adaptive Learning/Behavior Management Strategies: Consultation and Collaboration	
EDU 6569	Differentiated Instruction and Assessment in Mathematics	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

LOOKING TO DEEPEN YOUR KNOWLEDGE AND EXPERTISE?

The MAT+ offers qualifying students the opportunity to complete a MAT with further study in a selected area of expertise. Currently, students can take additional course work to earn either an additional license in special education (teacher of students of moderate disabilities, PreK–8 or 5–12).

MAT+ IN SPECIAL EDUCATION

The MAT+ provides qualifying students with the opportunity to complete a Master of Arts in Teaching (MAT) with further study in a selected area of expertise. Currently, students can take additional course work to earn either an additional license in special education (teacher of students of moderate disabilities, PreK-8 or 5-12) or an additional license in ESL (teacher of English as a Second Language, PreK-8 or 5-12). Teacher candidates may also plan a program of study that allows for triple licensure in consultation with the program director.

The special education course requirements are:

Code	Title	Hours
	Advanced special education course	4
	Advanced literacy course	4
	Advanced behavior management course	4
	Assessment course	4
EDU 6874	Practicum, Portfolio, and Panel Review	4

MAT+ IN ENGLISH AS A SECOND LANGUAGE (ESL)

This Commonwealth of Massachusetts-approved MAT+ program consists of five courses, some of which may be taken as electives in the MAT program.

The English as a Second Language course requirements are:

Code	Title	Hours
EDU 6300	Introduction to Language and Linguistics	4
EDU 6516	Sheltered English Instruction and Assessment	4
EDU 6517	Foundations of Teaching English as a Second Language: Research and Practice	4
EDU 6310	Literacy Development and the Academic Domains	4
EDU 6874	Practicum, Portfolio, and Panel Review	4

Teaching, Secondary Licensure, MAT

Designed for aspiring teachers and career changers, the Master of Arts in Secondary Education (MAT)¹ offers an appreciation for and an understanding of the diverse educational needs, social concerns, and cultural values of today's secondary schools.

This MAT in secondary education seeks to enhance your foundational skills, broaden your perspectives, and strengthen your ability to inspire and educate. This master's degree, which includes a full term of student teaching, seeks to produce graduates well positioned to make a meaningful impact in their school, in their community, and in the lives of their students.

- Gain political, social, and historical perspectives on education
- Explore the richly complex environments of schools and communities
- Develop a working understanding of teaching and learning in diverse settings
- Investigate how humans learn, acquire knowledge, and make sense of their experiences
- Examine theories of teaching and explore how best to teach for understanding and learning achievement
- Research methods and materials, pedagogies, and assessment strategies that foster integrated learning

¹ The Master of Arts in Secondary Education (grades 8–12) has been approved at the initial licensure level by the Massachusetts Department of Elementary and Secondary Education.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6051	Culture, Equity, Power, and Influence	4
EDU 6064	Curriculum and Assessment	4
EDU 6104	Child and Adolescent Development, Learning, and Teaching	4
EDU 6107	Inclusion, Equity, and Diversity	4
EDU 6162	Language, Culture, and Literacy in Middle and High Schools	4
EDU 6185	English-Language Learners in the General Education Classroom	4

EDU 6183	Collaborative Strategies for Effective Classroom Management	1
EDU 6866	Teaching Practicum and Seminar	1-8

Elective Courses

Code	Title	Hours
Complete 8 quarter hours from the following: 8		
EDU 6023	Institute in Creating a Community of Learners/Behaviors	
EDU 6184	Interdisciplinary Foundations	
EDU 6300	Introduction to Language and Linguistics	
EDU 6425	Special Education: Role of Special Educators in an Inclusive School	
EDU 6426	Developmental Language, Literacy, and Writing: Assessment and Instruction	
EDU 6429	Variations in Child and Adolescent Development	
EDU 6437	Assessment in Education	
EDU 6438	Teachers as Curriculum Leaders	
EDU 6465	Critical and Creative Thinking	
EDU 6516	Sheltered English Instruction and Assessment	
EDU 6520	Learning and the Brain: Translating Research into Practice	
EDU 6528	Adaptive Learning/Behavior Management Strategies: Consultation and Collaboration	
EDU 6569	Differentiated Instruction and Assessment in Mathematics	

Program Credit/GPA Requirements

45 total quarter hours required
 Minimum 3.000 GPA required

LOOKING TO DEEPEN YOUR KNOWLEDGE AND EXPERTISE?

The MAT+ offers qualifying students the opportunity to complete a MAT with further study in a selected area of expertise. Currently, students can take additional course work to earn either an additional license in special education (teacher of students of moderate disabilities, PreK-8 or 5-12) or an additional license in ESL (teacher of English as a Second Language, PreK-8 or 5-12).

MAT+ IN SPECIAL EDUCATION

The MAT+ provides qualifying students with the opportunity to complete a Master of Arts in Teaching (MAT) with further study in a selected area of expertise. Currently, students can take additional course work to earn either an additional license in special education (teacher of students of moderate disabilities, PreK-8 or 5-12) or an additional license in ESL (teacher of English as a Second Language, PreK-8 or 5-12). Teacher candidates may also plan a program of study that allows for triple licensure in consultation with the program director.

The special education course requirements are:

Code	Title	Hours
	Advanced special education course	4
	Advanced literacy course	4
	Advanced behavior management course	4

Assessment course		4
EDU 6874	Practicum, Portfolio, and Panel Review	4

MAT+ IN ENGLISH AS A SECOND LANGUAGE (ESL)

This Commonwealth of Massachusetts-approved MAT+ program consists of five courses, some of which may be taken as electives in the MAT program.

The English as a Second Language course requirements are:

Code	Title	Hours
EDU 6300	Introduction to Language and Linguistics	4
EDU 6516	Sheltered English Instruction and Assessment	4
EDU 6517	Foundations of Teaching English as a Second Language: Research and Practice	4
EDU 6310	Literacy Development and the Academic Domains	4
EDU 6874	Practicum, Portfolio, and Panel Review	4

Education, MEd

eLearning and Instructional Design Concentration

Recent research on the science of learning has revolutionized our understanding of how people learn. As technology has become ubiquitous in society, learning takes place in many venues and formats: face-to-face, blended, online, and mobile. Seismic shifts are taking place in the education sector, such as competency-based learning and open education. These developments are creating a growing demand for professionals who can help their organizations think strategically about approaches to learning that are pedagogically sound and technology-savvy.

The elearning and instructional design concentration explores the leading edge of next-generation learning design, with the goal of preparing its graduates to thrive in a world of expanded opportunities and delivery modes for learning. The concentration's innovative approach blends academic and experiential workplace-based learning. During the course of study, students develop an online portfolio of work to demonstrate their capacity to think strategically, put creative ideas into action, and design environments that improve student learning to meet academic, personal, institutional, and organizational goals.

Higher Education Administration Concentration

Due to advances in elearning and increasing student enrollments, the need for capable and effective school administrators has never been greater. In addition to providing solid guidance and direction, they must work to meet the needs of faculty, students, and parents alike. In response, the College of Professional Studies (CPS) offers a Master of Education with Concentration in Higher Education Administration.

This innovative master's degree program explores complex industry issues such as student demographics, financial concerns, legal and policy requirements, technology, and competitive forces.

Learning Analytics

Learning analytics is where big data meets traditional quantitative methods in education. Governments, universities, schools, and educational organizations are collecting vast amounts of data about learners and how they learn.

Much of this data does not come in neat, well-organized, and collected formats. It exists in varied forms across systems and locations. Analysts need the skills to access and transform this data so we can better understand not only what students know, but how they know it. Learning analytics and educational data mining are the tools to transform this data into knowledge and lead, in the end, to improved education.

Graduates of this program will emerge with the knowledge, competencies, and skills to engage successfully in the entire analytics cycle from project planning and implementation to communication and reporting. Specifically, graduates will work with real educational data to acquire the ability to:

- Articulate and integrate diverse perspectives on the field of learning analytics, including learning analytics assumptions, theories, epistemologies, and debates
- Align learning analytics processes to address the needs of educational institutions and answer questions posed by educational leaders
- Select, prepare, analyze, interpret, and evaluate learning analytic models appropriately
- Interpret and clearly communicate results to various stakeholders throughout the educational system

Learning and Instruction Concentration

As the field of education evolves, today's educators are constantly challenged to be aware of and incorporate best-in-class practices, new technologies, and the latest research and trends within their classrooms. In response, the CPS offers the Master of Education with Concentration in Learning and Instruction.

Designed for a broad range of educators, this program provides an in-depth look at the critical issues that are transforming the face of education: technology and distance learning, globalization, creative and critical thinking, assessments, and learning outcomes.

Reflecting the new direction of education, this master's degree program also allows you to choose your area of focus by selecting from degree specializations in math, science, English-language learning, literacy, leadership, and technology.

Whether you are a classroom teacher or an administrator or work in youth development, community education, early childhood, or in a before/aftercare program, you have an opportunity to gain new perspectives and acquire fresh strategies for meeting the needs of today's students. This program seeks to produce graduates empowered to implement new ideas and innovative strategies that are designed to improve educational effectiveness.

Special Education Concentration

Demand for graduate-level-prepared special education practitioners is on the rise, driven by heightened degree requirements and a shortage of licensed, qualified teachers. In response, the CPS is pleased to offer the Master of Education with Concentration in Special Education. Designed for educators who are licensed at the initial or professional level in another discipline, this innovative master's degree program seeks to prepare you to meet the special needs of students across a variety of school environments.

This program meets the Massachusetts Department of Elementary and Secondary Education standards and competencies for an additional licensure as a Teacher of Students with Moderate Disabilities, PreK–8 and 5–12.

In this advanced program, you have an opportunity to explore specific topics on modifying curriculum, designing curriculum-based assessments, managing severe behaviors, developing individualized education programs (IEPs), leveraging community resources, and improving literacy. As a result, you have an opportunity to enhance your ability to meet the needs of a diverse student population and to achieve the competencies required for this specialized license.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6050	Education as an Advanced Field of Study	5
EDU 6051	Culture, Equity, Power, and Influence	4

Concentration

Complete one of the following concentrations:

- eLearning and Instructional Design
- Higher Education Administration
- Learning Analytics
- Learning and Instruction
- Special Education

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

ELEARNING AND INSTRUCTIONAL DESIGN

Code	Title	Hours
Required Courses		
EDU 6319	How People Learn	4
EDU 6321	Models for Learning Design	4
EDU 6323	Technology as a Medium for Learning	4
EDU 6324	Competencies, Assessment, and Learning Analytics	4
EDU 6331	E-Learning Design as a Collaborative Profession	4
Capstone		
EDU 6225	Capstone (to be taken last)	4
Electives		
Complete three of the following:		12
EDU 6332	Open Learning	
EDU 6333	Social Media and Beyond	
EDU 6558	Issues in Education	
EDU 6202	Faculty, Curriculum, and Academic Community	
EDU 6329	Connecting Theory and Practice (This course should be taken at least 2 terms prior to Capstone to allow time for implementing a workplace-based experiential project that you will design as the signature assignment for the course.)	
EDU 6340	Learning Analytics Concepts and Theories	

EDU 6330	Digital Media Literacy	
EDU 6321	Models for Learning Design	
EDU 6184	Interdisciplinary Foundations	

HIGHER EDUCATION ADMINISTRATION

Code	Title	Hours
Required Courses		
EDU 6201	The Landscape of Higher Education	4
EDU 6324	Competencies, Assessment, and Learning Analytics	4
EDU 6447	The Demographics of Higher Education	4
Complete one of the following:		4
EDU 6202	Faculty, Curriculum, and Academic Community	
EDU 6203	Education Law, Policy, and Finance	
EDU 6221	Enrollment, Retention, Graduation, Success	
Complete one of the following:		4
EDU 6450	The Globalization of Education	
INT 6900	International Field Study Experience	
Capstone		
EDU 6225	Capstone (to be taken last)	4
Elective Courses		
Complete 12 quarter hours from the following:		12
EDU 6319	How People Learn	
or EDU 6520	Learning and the Brain: Translating Research into Practice	
EDU 6329	Connecting Theory and Practice	
EDU 6332	Open Learning	
EDU 6330	Digital Media Literacy	
EDU 6558	Issues in Education	
EDU 6300	Introduction to Language and Linguistics	
EDU 6534	Bilingualism, Second Language, and Literacy Development	
EDU 6182	Educational Statistics	
EDU 6184	Interdisciplinary Foundations	

LEARNING ANALYTICS

Code	Title	Hours
Required Courses		
EDU 6340	Learning Analytics Concepts and Theories	4
EDU 6341	Introduction to Data Mining in Education	4
EDU 6343	Predictive Modeling for Learning Analytics	4
EDU 6344	Data Visualization for Learning Analytics	4
EDU 6345	Text Mining for Learning Analytics	4
EDU 6324	Competencies, Assessment, and Learning Analytics	4
EDU 6182	Educational Statistics	4
EDU 6319	How People Learn	4
Capstone		
EDU 6225	Capstone (to be taken last)	4

LEARNING AND INSTRUCTION

Code	Title	Hours
Required Courses		
EDU 6330	Digital Media Literacy	4
EDU 6328	Policy and Leadership	4
EDU 6437	Assessment in Education	4
Complete one of the following:		4
EDU 6465	Critical and Creative Thinking	
EDU 6520	Learning and the Brain: Translating Research into Practice	
EDU 6319	How People Learn	
Capstone		
EDU 6225	Capstone (to be taken last)	4
Electives		
Complete four courses from any other concentration:		16
EDU 6201	The Landscape of Higher Education	
EDU 6447	The Demographics of Higher Education	
EDU 6221	Enrollment, Retention, Graduation, Success	
EDU 6450	The Globalization of Education	
EDU 6332	Open Learning	
EDU 6323	Technology as a Medium for Learning	
EDU 6426	Developmental Language, Literacy, and Writing: Assessment and Instruction	
EDU 6528	Adaptive Learning/Behavior Management Strategies: Consultation and Collaboration	
EDU 6429	Variations in Child and Adolescent Development	
EDU 6558	Issues in Education	
EDU 6185	English-Language Learners in the General Education Classroom	
EDU 6300	Introduction to Language and Linguistics	
EDU 6534	Bilingualism, Second Language, and Literacy Development	
EDU 6182	Educational Statistics	
EDU 6438	Teachers as Curriculum Leaders	
EDU 6184	Interdisciplinary Foundations	

SPECIAL EDUCATION

Code	Title	Hours
Required Courses		
EDU 6425	Special Education: Role of Special Educators in an Inclusive School	4
EDU 6426	Developmental Language, Literacy, and Writing: Assessment and Instruction	4
EDU 6438	Teachers as Curriculum Leaders	4
EDU 6528	Adaptive Learning/Behavior Management Strategies: Consultation and Collaboration	4
EDU 6569	Differentiated Instruction and Assessment in Mathematics	4
EDU 6874	Practicum, Portfolio, and Panel Review	4
Electives		
Complete 12 quarter hours from the following:		12

EDU 6185	English-Language Learners in the General Education Classroom
EDU 6429	Variations in Child and Adolescent Development
EDU 6437	Assessment in Education
EDU 6465	Critical and Creative Thinking
EDU 6520	Learning and the Brain: Translating Research into Practice
EDU 6558	Issues in Education
EDU 6184	Interdisciplinary Foundations

Analytics, MPS

With the proliferation of data across all sectors of the global economy, there is an immediate need for individuals to be knowledgeable in how to harness this data for continuous analysis and study. This spectrum spans from commercial to nonprofit, from higher education to government and is constantly expanding with new sectors, as data mining becomes the standard for knowledge gathering in the digital age.

The Master's in Analytics helps to meet the demand from employers with a graduate program that provides students with an end-to-end analytics education through a core curriculum with integrated experiential learning opportunities. The program prepares students with a deep understanding of the mechanics of working with data (i.e., its collection, modeling, and structuring) along with the capacity to identify and communicate data-driven insights that ultimately influence decisions.

Not only will students graduate with a portfolio of work samples that demonstrate their range and depth of skill, they will be part of a larger network of analytics professionals who will serve them now and in the future.

- Build portfolios of real-world projects demonstrating competency with key technologies, visualization and communication techniques, and the ability to translate information into recommended actions.
- Gain a core analytical skillset upon which to layer more specialized technical skillsets or industry-specific applications.
- Develop a relationship to industry leaders and peers so that you may leverage your Northeastern education long after your formal education ends.
- Choose from a host of flexible programming options—all of which share an industry-defined core curriculum and a required, credit-bearing experiential requirement.
- Anticipate and contribute to the future direction of data analytics.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
ALY 6000	Introduction to Analytics	3
ALY 6010	Probability Theory and Introductory Statistics	3
ALY 6015	Intermediate Analytics	3
ALY 6050	Introduction to Enterprise Analytics	3
ALY 6070	Communication and Visualization for Data Analytics	3

Concentration

Complete one of the following three concentrations:

Code	Title	Hours
Concentration in Statistical Modeling		
ALY 6110	Data Management and Big Data	3
ALY 6020	Predictive Analytics	3
ALY 6040	Data Mining Applications	3
ALY 6983	Topics	3
GIS 5103	Foundations of Geographic Information Science	4

Code	Title	Hours
Concentration in Evidence-Based Modeling		
ALY 6060	Decision Support and Business Intelligence	3
ALY 6100	Data-Driven Decision Making	3
ALY 6120	Leadership in Analytics	3
ALY 6040	Data Mining Applications	3
ALY 6130	Risk Management for Analytics	3

Code	Title	Hours
Concentration in Informational Design		
ALY 6030	Data Warehousing and SQL	3
ALY 6040	Data Mining Applications	3
ITC 6015	Enterprise Information Architecture	3
ITC 6020	Information Systems Design and Development	3
ALY 6060	Decision Support and Business Intelligence	3

Experiential Learning Course

Code	Title	Hours
ALY 6080	Integrated Experiential Learning	3

Experiential Capstone Course

Code	Title	Hours
ALY 6980	Capstone	3

Electives

Code	Title	Hours
Complete three of the following:		
ALY 6020	Predictive Analytics	3
ALY 6030	Data Warehousing and SQL	3
ALY 6040	Data Mining Applications	3
ALY 6050	Introduction to Enterprise Analytics	3
ALY 6060	Decision Support and Business Intelligence	3
ALY 6100	Data-Driven Decision Making	3
ALY 6110	Data Management and Big Data	3
ALY 6120	Leadership in Analytics	3
ALY 6130	Risk Management for Analytics	3
ALY 6140	Analytics Systems Technology	3
ALY 6150	Healthcare/Pharmaceutical Data and Applications	3
ALY 6160	Business Intelligence in Healthcare/Pharmaceutical	3

ALY 6983	Topics
ITC 6045	Information Technology Policy, Ethics, and Social Responsibility
ITC 6310	Information Security Governance
EDU 6184	Interdisciplinary Foundations
GIS 5201	Advanced Spatial Analysis
ITC 6020	Information Systems Design and Development
LDR 6110	Leading Teams
PJM 6015	Project Risk Management
PJM 6005	Project Scope Management
PJM 6125	Project Evaluation and Assessment
LDR 6135	Ethical Leadership
PJM 6180	Project Stakeholder Management

Program Credit/GPA Requirements

45 total quarter hours required
 Minimum 3.000 GPA required

Digital Media, MPS

Students in the Master of Professional Studies in Digital Media will build their skills and expertise while gaining experience using a variety of industry-standard and cutting-edge technologies and tools. Our curriculum is organized around three types of experiences: core courses, concentration electives, and a capstone that can be completed as an individual thesis or a team project.

Our core courses in media creation, interactive design, usability, design thinking, and narrative structure provide a baseline for producing content-rich experiences. A series of electives are offered in seven distinctive areas: 3-D animation, game design, digital video, social media, digital media management, or one of two tracks in interactive design: visual design or usability and production. In the capstone experience, you'll work with the guidance of faculty to channel your passion into a project that provides tangible evidence of your abilities.

Whether you are a full- or part-time student, our cohort structure allows you to build meaningful working relationships with students from around the globe. Team-based assignments strengthen your project management and leadership skills and allow you to take part in the design and development of more complex media projects than you could by working alone. The team efforts will also prepare you for your future as a professional in digital media's collaboration-oriented culture.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Core Courses

Code	Title	Hours
DGM 6122	Foundations of Digital Storytelling	4
DGM 6145	Information Technology and Creative Practice	4
DGM 6521	Web Creation for Content Management Systems	2
Complete one of the following:		4
DGM 6140	Sound Design	
DGM 6168	Usability and Human Interaction	
Complete one of the following options:		8

Thesis Option	
DGM 6890	Thesis Proposal Development
DGM 7990	Thesis

Capstone Option	
DGM 7980	Capstone
Technical course from the workshops list	

Concentrations

Complete one of the following concentrations:

- 3-D Animation (p. 321)
- Digital Media Management (p.)
- Digital Video (p.)
- Game Design (p.)
- Interactive Design (p.)
- Social Media (p.)

Elective

Code	Title	Hours
Complete one of the following:		3-4
ALY 6110	Data Management and Big Data	
DGM 6125	Time-Based Media	
DGM 6300	Digital Capture and Output	
DGM 6322	Advanced Digital Storytelling	
DGM 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Workshops

Optional digital media workshops are designed to provide valuable technical skills and tools for students in all graduate degree programs.

Code	Title	Hours
Students may complete one of the following:		
DGM 6515	Introduction to After Effects	
TCC 6410	Online Documentation	
TCC 6620	Collecting User Data	

Program Credit/GPA Requirements

45 total quarter hours required
 Minimum 3.000 GPA required

3-D ANIMATION

Code	Title	Hours
DGM 6450	Animation Basics	4
DGM 6510	3-D Modeling	4
DGM 6530	Character Animation	4
DGM 6535	Rigging Principles and Techniques	4
DGM 6540	Compositing	4

DIGITAL MEDIA MANAGEMENT

Code	Title	Hours
DGM 6230	Digital Media Entrepreneurship	4
DGM 6280	Managing for Digital Media	4
DGM 6285	Interactive Marketing Fundamentals	4

DGM 6290	Social Media and Brand Strategy Implementation	4
DGM 6279	Project Management for Digital Media	4

DIGITAL VIDEO

Code	Title	Hours
Complete 20 quarter hours from the following:		20
DGM 6435	Digital Video Production	
DGM 6440	Editing in the Digital Studio	
DGM 6520	Lighting for the Camera	
DGM 6540	Compositing	
DGM 6545	Documentary and Nonfiction Production	
DGM 6430	Screenwriting: Linear and Interactive	

GAME DESIGN

Code	Title	Hours
Complete 20 quarter hours from the following:		20
DGM 6308	Intermediate Programming for Digital Media	
DGM 6400	Game Design Fundamentals	
DGM 6405	Game Development	
DGM 6410	Game Design Technology Lab	
DGM 6403	Game Engine Fundamentals	

INTERACTIVE DESIGN

Code	Title	Hours
Interactive Design		
DGM 6461	Interactive Information Design 1	4
Complete four courses from one of the following tracks:		16
Design Track		
DGM 6217	Typography for Interactivity	
DGM 6463	Interactive Information Design 2	
DGM 6317	Screen-Based Publication Design	
DGM 6471	Designing Infographics	
Usability and Development Track		
DGM 6451	Web Development	
DGM 6268	Usable Design for Mobile Digital Media	
DGM 6525	Research Methods for Global User Experiences	
TCC 6110	Information Architecture	
TCC 6710	Content Strategy	

SOCIAL MEDIA

Code	Title	Hours
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	3
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	3
CMN 6065	Implementation and Management of Social Media Channels and Online Communities	3
DGM 6285	Interactive Marketing Fundamentals	4
DGM 6290	Social Media and Brand Strategy Implementation	4
TCC 6710	Content Strategy	4

CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	3
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Digital Media, MPS—Connect

Students in the Master of Professional Studies in Digital Media will build their skills and expertise while gaining experience using a variety of industry-standard and cutting-edge technologies and tools. Our curriculum is organized around three types of experiences: core courses, concentration electives, and a capstone that can be completed as an individual thesis or a team project.

Our core courses in media creation, interactive design, usability, design thinking, and narrative structure provide a baseline for producing content-rich experiences. A series of electives are offered in seven distinctive areas: 3-D animation, game design, digital video, social media, digital media management, or one of two tracks in interactive design: visual design or usability and production. In the capstone experience, you'll work with the guidance of faculty to channel your passion into a project that provides tangible evidence of your abilities.

Whether you are a full- or part-time student, our cohort structure allows you to build meaningful working relationships with students from around the globe. Team-based assignments strengthen your project management and leadership skills and allow you to take part in the design and development of more complex media projects than you could by working alone. The team efforts will also prepare you for your future as a professional in digital media's collaboration-oriented culture.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Foundation Courses

Code	Title	Hours
DGM 6105	Visual Communications Foundation	4
DGM 6108	Programming Foundations for Digital Media	4
DGM 6109	Lab for DGM 6108	2
DGM 6501	Web Creation Boot Camp	2

Required Core Courses

Code	Title	Hours
DGM 6122	Foundations of Digital Storytelling	4
DGM 6145	Information Technology and Creative Practice	4
DGM 6521	Web Creation for Content Management Systems	2

Complete one of the following:

DGM 6140	Sound Design	
DGM 6168	Usability and Human Interaction	

Complete one of the following options:

Thesis Option		
DGM 6890	Thesis Proposal Development	
DGM 7990	Thesis	

Capstone Option

DGM 7980	Capstone	
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Technical course from the workshops list

Concentrations

Complete one of the following concentrations:

- 3-D Animation (p. 323)
- Digital Media Management (p.)
- Digital Video (p.)
- Game Design (p.)
- Interactive Design (p.)
- Social Media (p.)

Electives

Code	Title	Hours
Complete one of the following:		3-4
ALY 6110	Data Management and Big Data	
DGM 6125	Time-Based Media	
DGM 6300	Digital Capture and Output	
DGM 6322	Advanced Digital Storytelling	
DGM 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Workshops

Optional digital media workshops are designed to provide valuable technical skills and tools for students in all graduate degree programs.

Code	Title	Hours
Students may complete one of the following:		
DGM 6506	Introduction to Digital Video	
DGM 6515	Introduction to After Effects	
TCC 6620	Collecting User Data	
TCC 6630	Introduction to XML	

Program Credit/GPA Requirements

56 total quarter hours required
 Minimum 3.000 GPA required

3-D ANIMATION

Code	Title	Hours
DGM 6450	Animation Basics	4
DGM 6510	3-D Modeling	4
DGM 6530	Character Animation	4
DGM 6535	Rigging Principles and Techniques	4
DGM 6540	Compositing	4

DIGITAL MEDIA MANAGEMENT

Code	Title	Hours
DGM 6230	Digital Media Entrepreneurship	4
DGM 6280	Managing for Digital Media	4
DGM 6285	Interactive Marketing Fundamentals	4
DGM 6290	Social Media and Brand Strategy Implementation	4
DGM 6279	Project Management for Digital Media	4

DIGITAL VIDEO

Code	Title	Hours
Complete 20 quarter hours from the following:		20
DGM 6435	Digital Video Production	
DGM 6440	Editing in the Digital Studio	
DGM 6520	Lighting for the Camera	
DGM 6540	Compositing	
DGM 6545	Documentary and Nonfiction Production	
DGM 6430	Screenwriting: Linear and Interactive	

GAME DESIGN

Code	Title	Hours
Complete 20 quarter hours from the following:		20
DGM 6308	Intermediate Programming for Digital Media	
DGM 6400	Game Design Fundamentals	
DGM 6405	Game Development	
DGM 6410	Game Design Technology Lab	
DGM 6403	Game Engine Fundamentals	

INTERACTIVE DESIGN

Code	Title	Hours
Interactive Design		
DGM 6461	Interactive Information Design 1	4
Complete four courses from one of the following tracks:		16
Design Track		
DGM 6217	Typography for Interactivity	
DGM 6463	Interactive Information Design 2	
DGM 6317	Screen-Based Publication Design	
DGM 6471	Designing Infographics	
Usability and Development Track		
DGM 6451	Web Development	
DGM 6268	Usable Design for Mobile Digital Media	
DGM 6525	Research Methods for Global User Experiences	
TCC 6110	Information Architecture	
TCC 6710	Content Strategy	

SOCIAL MEDIA

Code	Title	Hours
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	3
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	3
CMN 6065	Implementation and Management of Social Media Channels and Online Communities	3
DGM 6285	Interactive Marketing Fundamentals	4
DGM 6290	Social Media and Brand Strategy Implementation	4
TCC 6710	Content Strategy	4

Enterprise Intelligence, MPS

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
EAI 6000	Fundamentals of Artificial Intelligence	3
EAI 6010	Applications of Artificial Intelligence	3
ALY 6110	Data Management and Big Data	3
EAI 6030	Usability and Human Interaction	3
EAI 6020	AI System Technologies	3

Concentration

Complete one of the following concentrations:

- AI for Business Ventures (p. 324)
- AI for Finance (p. 324)
- AI for Healthcare (p. 324)
- AI for Human Resources (p. 324)

Experiential Network and Capstone

Code	Title	Hours
INT 6940	Experiential Learning Projects for Professionals	3
EAI 6980	Integrated Experiential Capstone	3

Elective Courses

Code	Title	Hours
Complete three of the following, or any concentration courses outside of your declared concentration:		9
CED 6050	Commerce and Economic Development	
CMN 6000	Introduction to Organizational Communication	
GIS 5201	Advanced Spatial Analysis	
GIS 6360	Spatial Databases	
LDR 6135	Ethical Leadership	
PJM 6005	Project Scope Management	
PJM 6015	Project Risk Management	
PJM 6205	Leading and Managing Technical Projects	
EDU 6184	Interdisciplinary Foundations	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

Concentrations

AI FOR BUSINESS VENTURES

Code	Title	Hours
EDU 6558	Issues in Education	1-4
ALY 6040	Data Mining Applications	3
ITC 6015	Enterprise Information Architecture	3
EAI 6080	Advanced Analytical Utilization	3
EAI 6120	AI Communication and Visualization	3

AI FOR FINANCE

Code	Title	Hours
FIN 6101	Accounting Fundamentals for Financial Institutions	3,4
ALY 6040	Data Mining Applications	3
EAI 6050	Finance Information Processing	3
EAI 6080	Advanced Analytical Utilization	3
EAI 6120	AI Communication and Visualization	3

AI FOR HEALTHCARE

Code	Title	Hours
ALY 6150	Healthcare/Pharmaceutical Data and Applications	3
ALY 6040	Data Mining Applications	3
EAI 6060	Healthcare Information Processing	3
EAI 6080	Advanced Analytical Utilization	3
EAI 6120	AI Communication and Visualization	3

AI FOR HUMAN RESOURCES

Code	Title	Hours
HRM 6025	Workforce Analytics	3
ALY 6040	Data Mining Applications	3
EAI 6070	Human Resources Information Processing	3
EAI 6080	Advanced Analytical Utilization	3
EAI 6120	AI Communication and Visualization	3

Geospatial Services, MPS

The Northeastern University MPS in Geospatial Services program is designed for working professionals striving to maintain competitive, leading-edge capabilities at a time of rapidly growing utilization of geospatial data for diversity of government and business intelligence needs. Program strengths are highly correlated with geospatial workforce requirements as identified by geospatial enterprise leaders from government and industry (e.g., GEOINT Essential Body of Knowledge (http://usgif.org/certification/geo-int_EBK)). Our curriculum incorporates tools, technologies, and services required in three primary sectors:

- *Location-based geodata* (collect, manage, distribute spatial information and imagery)
- *Geo-applications and devices* (devices and software for creating, visualizing, and sharing geospatial information)
- *Geo-expert industries* (turn location-based information into insights for commercial and government organizations)

Available 100 percent online and built to Northeastern University's high academic standards, our program's experiential focus emphasizes the connections between learning and workplace needs.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
GIS 5103	Foundations of Geographic Information Science	4
RMS 5105	Fundamentals of Remote Sensing	3
GIS 5201	Advanced Spatial Analysis	3

GIS 6980	Capstone	3
Complete two of the following:		6-8
DGM 6105	Visual Communications Foundation	
ITC 6045	Information Technology Policy, Ethics, and Social Responsibility	
PJM 5900	Foundations of Project Management	
PJM 6000	Project Management Practices	
SIA 6000	Psychology of Intelligence Analysis	

Concentrations

If students prefer to focus their studies on a particular concentration, they may select 18 quarter hours from one of the concentrations below and complement their studies with 6 quarter hours of open elective courses to meet the minimum 45-quarter-hour degree requirement.

Students are not required to complete a concentration. Any combination of 24 quarter hours from concentration and elective courses will satisfy degree requirements.

GEOGRAPHIC INFORMATION SYSTEMS

Code	Title	Hours
Complete six of the following:		18
GIS 6320	Use and Applications of Free and Open-Source GIS Desktop Software	
GIS 6340	GIS Customization	
GIS 6350	Planning a GIS Implementation	
GIS 6360	Spatial Databases	
GIS 6370	Internet-Based GIS	
GIS 6385	GIS/Cartography	
GIS 6390	Business Applications of Geographic Information Systems	
GIS 6391	Healthcare Applications of Geographic Information Systems	
GIS 6394	Crisis Mapping for Humanitarian Action	
GIS 6395	Geospatial Analysis of Crime	
GIS 6396	GIS for Defense, Homeland Security, and Emergency Response	

REMOTE SENSING

Code	Title	Hours
RMS 6110	Digital Image Processing	3
Complete five of the following:		15
RMS 6215	Unmanned Aerial Systems for Geospatial Analysts	
RMS 6230	Remote Sensing and Global Change	
RMS 6240	Introduction to Radar and LiDAR Remote Sensing	
RMS 6250	Spatial Analytics for Vegetation and Precision Agriculture	
RMS 6270	Remote Sensing for Disaster Management	
RMS 6280	Automated Feature Extraction for the Geospatial Professional	
RMS 6290	Spectroscopic Image Analysis	
RMS 6292	Photogrammetry and GPS	
GIS 6394	Crisis Mapping for Humanitarian Action	

GEOSPATIAL ANALYTICS

Code	Title	Hours
ALY 6110	Data Management and Big Data	3
ALY 6020	Predictive Analytics	3
ALY 6040	Data Mining Applications	3
ALY 6983	Topics	3
ALY 6070	Communication and Visualization for Data Analytics	3
Open elective from GIS, RMS		3

Electives

Open electives can be fulfilled by choosing either 6 quarter hours from the courses listed above or below. Please note that if you are completing the concentration in statistical analytics, you will need to complete 9 quarter hours of open elective courses.

Code	Title	Hours
COP 6940	Personal and Career Development	3-4
INT 6940	Experiential Learning Projects for Professionals	1-4
EDU 6184	Interdisciplinary Foundations	2

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Informatics, MPS

A relatively new and rapidly evolving area, informatics is increasingly used to solve today's problems. Whether it's used to create information and communication technologies, design decision support systems, develop 3-D visualizations, or devise mobile applications, informatics can be applied across a wide range of industries to address a variety of privacy, security, healthcare, environmental, educational, and social challenges. In response, Northeastern University offers the Master of Professional Studies in Informatics. Designed to improve your computing skills and enhance your knowledge of computing applications, this master's degree seeks to prepare you to excel in the fast-growing and dynamic field of informatics.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
ITC 6400	Foundations of Informatics	3
ITC 6000	Database Management Systems	3
ITC 6010	Information Technology Strategy and Governance	3
ITC 6020	Information Systems Design and Development	3
ITC 6035	Information Technology Project Management	3

Capstone and Experiential Learning

ITC 6040	Informatics Capstone	3
INT 6940	Experiential Learning Projects for Professionals	1-4

Optional Concentrations

Students are not required to complete one of the following concentrations, but they must complete 24 credit hours of course work approved by their career and academic coach.

- Information Security Management (p. 326)
- Geographic Information Systems (p. 326)
- Leading and Managing Technical Projects (p. 326)
- Analytics (p. 326)
- Human-Centered Informatics (p. 326)
- Cloud Computing Application and Management (p. 326)

INFORMATION SECURITY MANAGEMENT

Code	Title	Hours
ITC 6300	Foundations of Information Security	3
ITC 6305	IT Infrastructure (Systems, Networks, Telecom)	3
ITC 6310	Information Security Governance	3
ITC 6315	Information Security Risk Management	3
ITC 6320	Information Security Technology (Complete three of the following courses)	3
Complete one of the following:		3-4
ITC 6325	CISA Preparation	
ITC 6330	CISSP Preparation	
ITC 6080	Network Security Concepts	
ITC 6082	Network Protection	

GEOGRAPHIC INFORMATION SYSTEMS

Code	Title	Hours
Classes offered online only:		
GIS 5103	Foundations of Geographic Information Science	4
RMS 5105	Fundamentals of Remote Sensing	3
GIS 5201	Advanced Spatial Analysis	3
Complete three of the following:		9
GIS 6340	GIS Customization	
GIS 6350	Planning a GIS Implementation	
GIS 6360	Spatial Databases	
GIS 6370	Internet-Based GIS	
GIS 6385	GIS/Cartography	
GIS 6390	Business Applications of Geographic Information Systems	
GIS 6391	Healthcare Applications of Geographic Information Systems	

LEADING AND MANAGING TECHNICAL PROJECTS

Code	Title	Hours
PJM 6000	Project Management Practices	3
PJM 6205	Leading and Managing Technical Projects	3
PJM 6210	Communication Skills for Project Managers	3
PJM 6215	Leading Remote Project Teams	3
PJM 6810	Principles of Agile Project Management	3
PJM 6825	Agile Lean Product Development	3

ANALYTICS

Code	Title	Hours
ALY 6000	Introduction to Analytics	3
ALY 6010	Probability Theory and Introductory Statistics	3
ALY 6020	Predictive Analytics	3
ALY 6040	Data Mining Applications	3
ALY 6070	Communication and Visualization for Data Analytics	3
Complete one of the following:		3
ALY 6015	Intermediate Analytics	
ALY 6030	Data Warehousing and SQL	
ALY 6110	Data Management and Big Data	

HUMAN-CENTERED INFORMATICS

Code	Title	Hours
ITC 6410	Fundamentals of Human Behaviors for Interactive Systems	3
DGM 6461	Interactive Information Design 1	4
DGM 6168	Usability and Human Interaction	4
DGM 6268	Usable Design for Mobile Digital Media	4
Complete one of the following:		3-4
DGM 6463	Interactive Information Design 2	
ALY 6070	Communication and Visualization for Data Analytics	
ITC 6355	Web Application Design and Development	

CLOUD COMPUTING APPLICATION AND MANAGEMENT

Code	Title	Hours
ITC 6420	Introduction to Cloud Computing Applications and Management	3
ITC 6450	Advanced Cloud Computing Applications and Management	3
ITC 6015	Enterprise Information Architecture	3
ITC 6320	Information Security Technology	3
ITC 6355	Web Application Design and Development	3
Complete one of the following:		3-4
ITC 6082	Network Protection	
ITC 6460	Cloud Analytics	
ITC 6470	Enterprise Data Storage and Management Technologies	

Electives

Code	Title	Hours
Complete 5–6 quarter hours from the following:		6
DGM 6501	Web Creation Boot Camp	
DGM 6521	Web Creation for Content Management Systems	
DGM 6145	Information Technology and Creative Practice	
EDU 6184	Interdisciplinary Foundations	
GIS 6360	Spatial Databases	
ITC 6030	Computer Systems and Networks	
ITC 6080	Network Security Concepts	
ITC 6082	Network Protection	

ITC 6430	Enterprise Information Technology Service Management
ITC 6340	Mobile and Wireless Networks and Applications
ITC 6345	Systems and Network Administration
ALY 6050	Introduction to Enterprise Analytics
ALY 6060	Decision Support and Business Intelligence
ALY 6100	Data-Driven Decision Making
ALY 6110	Data Management and Big Data
ALY 6120	Leadership in Analytics
ALY 6130	Risk Management for Analytics
ALY 6015	Intermediate Analytics
ALY 6030	Data Warehousing and SQL
ITC 6045	Information Technology Policy, Ethics, and Social Responsibility
GIS 5103	Foundations of Geographic Information Science
GIS 6340	GIS Customization
GIS 6360	Spatial Databases
GIS 6391	Healthcare Applications of Geographic Information Systems
PJM 6000	Project Management Practices
PJM 6205	Leading and Managing Technical Projects
TCC 6110	Information Architecture

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

Applied Nutrition, MS

Increased attention on disease prevention through better dietary habits has heightened the demand for skilled nutrition professionals.

To meet the demands and need in the industry, this Master of Science in Applied Nutrition degree is designed to build upon your clinical knowledge and to allow you to concentrate in one of four specialty areas. This advanced program is open to individuals who hold undergraduate degrees in health science, dietetics, or a related area.

Led by real-world practitioners, including dietitians, an exercise scientist, and a clinical psychologist, this innovative nutrition degree seeks to provide you with a solid grounding in nutrition, metabolism, disease prevention, health promotion, and clinical behavior. Complementing the core nutrition courses is the college's renowned nutrition practicum that allows you to work directly with registered dietitians, fitness specialists, as well as other health professionals.

Further differentiating this master's degree in nutrition is the option to choose from four degree concentrations: business and entrepreneurship in nutrition; nutrition education; nutrition and fitness; and obesity and nutritional health. This degree program seeks to give you the knowledge and skills you need to succeed in the field of nutrition.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
NTR 6100	Advanced Nutrition and Metabolism	4
NTR 6110	Medical Nutrition Therapy	4
NTR 6112	Research Methods in Nutrition	4
NTR 6115	Health Promotion/Disease Prevention	4
NTR 6118	Clinical Health Behavior Change	4
NTR 6165	Food and Society	4
NTR 6866	Applied Research in Nutrition (Recommended as the last course taken)	1-4

Concentration

Complete one of the following four concentrations:¹

BUSINESS AND ENTREPRENEURSHIP IN NUTRITION

Code	Title	Hours
NTR 6155	Nutrition Entrepreneurship	3
NTR 6130	Healthcare and Nutrition Communication	4
PJM 5900	Foundations of Project Management	4
NTR 6202	The Financing of Nutrition and Wellness	3
NTR 7880	Nutrition in Practice	1-4

NUTRITION EDUCATION

Code	Title	Hours
Required Courses		
NTR 6200	Nutrition Education	4
NTR 6130	Healthcare and Nutrition Communication	4
NTR 6201	Commercialization of Nutrition and Nutritional Information	3
NTR 7880	Nutrition in Practice	1-4

Nutrition Education Elective

Complete one of the following:		
NTR 6119	Pediatric Nutrition	4
NTR 6120	Healthy Aging: Nutrition Strategies for Optimal Longevity	4
NTR 6101	Nutrition Program Planning	4

NUTRITION AND FITNESS

Code	Title	Hours
Required Courses		
NTR 7147	Sports and Fitness Nutrition	3
NTR 6148	Exercise Physiology	3
NTR 6150	Sports Psychology	3
NTR 7880	Nutrition in Practice	1-4

Nutrition and Fitness Elective

Complete one of the following:		
NTR 6120	Healthy Aging: Nutrition Strategies for Optimal Longevity	4
NTR 6101	Nutrition Program Planning	4

OBESITY AND NUTRITIONAL HEALTH

Code	Title	Hours
Required Courses		
NTR 7130	Overweight and Obesity 1	4

NTR 7132	Overweight and Obesity 2	4
NTR 6201	Commercialization of Nutrition and Nutritional Information	3
NTR 7880	Nutrition in Practice	1-4
Obesity and Nutritional Health Elective		
Complete one of the following:		4
NTR 7140	Wellness and Nutrition	
NTR 7135	Eating Disorders in Children and Adults	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

¹ Interdisciplinary Foundations (EDU 6184) may be taken as an elective.

Commerce and Economic Development, MS

Globalization has created a borderless economy with a host of new opportunities and challenges for those engaged in commerce and economic development. While global markets offer exciting growth prospects, navigating the world stage requires in-depth knowledge of the financial, regulatory, and economic environments and institutions that affect the global economy and international trade. To meet the need for both insight and skills development, Northeastern University's College of Professional Studies—in collaboration with Northeastern University's College of Social Sciences and Humanities—offers the online Master of Science in Commerce and Economic Development.

This graduate-level program integrates economics, leadership, institutional organization, technology, and public policy into a unique and focused educational experience designed to help guide and advance a rewarding career in the private or public sectors.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
CED 6010	Applied Microeconomic Theory 1	3
CED 6020	Applied Macroeconomic Theory 1	3
CED 6030	Mathematical Methods for Economics 1	3
CED 6040	Applied Econometrics	3
CED 6050	Commerce and Economic Development	3
CMN 6080	Intercultural Communication	3
CED 6910	Capstone: Master's Project	4

Concentration

Complete one of the following concentrations:

ECONOMIC ANALYSIS

Code	Title	Hours
CED 6011	Applied Microeconomic Theory 2	3
CED 6021	Applied Macroeconomic Theory 2	3
CED 6031	Mathematical Methods for Economics 2	3
CED 6041	Applied Econometrics II	3

CED 6051	Open Economy Macroeconomic Analysis	3
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ECONOMIC ENTREPRENEURSHIP

Code	Title	Hours
CED 6070	Economics of Human Capital	3
ALY 6050	Introduction to Enterprise Analytics	3
CMN 6095	Foundations of Developing Cultural Awareness	3
GST 6430	Leadership and Management	4
CED 6140	Economics of E-Commerce	3

DATA ANALYTICS

Code	Title	Hours
ALY 6000	Introduction to Analytics	3
ALY 6010	Probability Theory and Introductory Statistics	3
ALY 6015	Intermediate Analytics	3
ALY 6100	Data-Driven Decision Making	3
ALY 6110	Data Management and Big Data	3

FINANCIAL ECONOMICS

Code	Title	Hours
FIN 6161	Investment Analysis	4
FIN 6102	Asset and Liability Management	4
FIN 6120	Building Financial Relationships	4
CED 6210	Managerial Finance	3
CED 6220	International Finance	3

Electives

Code	Title	Hours
Complete 3–8 quarter hours from the following:		3-8
COP 6940	Personal and Career Development	
GST 6102	Global Corporate and Social Responsibility	
CED 6090	Cultural Economic Development	
CED 6110	Law and Economics	
CED 6120	Environmental Economics	
CED 6130	Sustainable Economic Development	
EDU 6184	Interdisciplinary Foundations	

Program Credit/GPA Requirements

45–48 total quarter hours required

Minimum 3.000 GPA required

Corporate and Organizational Communication, MS

Across all industries and professions, strong written and oral communication skills are essential to success. Whether you are seeking to advance in a communications-related field or get ahead in your current organization, this program seeks to provide the practical knowledge and valuable perspectives you need to communicate across a variety of contexts and situations.

From negotiation and writing to crisis management and public speaking, the Master of Science in Corporate and Organizational Communication degree program examines topics that are critical to effective organizational communication. Incorporating best practices, case studies, and classroom learning, courses within this innovative

master's degree in communication address complex communication challenges, seeking to provide you with a distinct advantage in today's competitive marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Note: Introduction to Organizational Communication (CMN 6000) is required for students who do not have any professional experience in communication. Students with professional communication experience should begin the program with Strategic Communication Management (CMN 6010):

Code	Title	Hours
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	3-4
CMN 6010	Strategic Communication Management	3
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6080	Intercultural Communication	3
CMN 6090	Organizational Culture, Climate, and Communication	3
CMN 6100	Communication Networks and Managing Information	3
CMN 6910	Organizational Communication Assessment	3

Capstone

Code	Title	Hours
CMN 6940	Projects for Professionals	4

Concentrations

- Human Resource Management (p. 329)
- Public and Media Relations (p. 329)
- Leadership (p. 330)
- Project Management (p. 330)
- Social Media and Online Communication (p. 330)
- Cross-Cultural Communication (p. 330)
- Usability/User Experience (p. 330)
- Leading Communication Strategy and Talent Development (p. 330)

Elective Courses

Note: Students who take Introduction to Organizational Communication (CMN 6000) are only required to take two courses in this section.

Code	Title	Hours
Complete three of the following: 4-12		
CMN 6015	Introduction to the Digital Era: The Power of Social Media	
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	
CMN 6050	Crisis Communication	

CMN 6061	Personal Branding	
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	
CMN 6060	Negotiation, Mediation, and Facilitation	
COP 6940	Personal and Career Development	
INT 6943	Integrative Experiential Learning	
INT 6900	International Field Study Experience	
INT 6940	Experiential Learning Projects for Professionals	
TCC 6620	Collecting User Data	
TCC 6610	Prototyping	
CMN 6095	Foundations of Developing Cultural Awareness	
CMN 6085	Strategies for Cross-Cultural Facilitation and Negotiation	
CMN 6005	Foundations of Professional Communication	
EDU 6184	Interdisciplinary Foundations	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

HUMAN RESOURCES MANAGEMENT

Code	Title	Hours
Required Courses		
HRM 6015	Introduction to Human Resources Management	3
HRM 6025	Workforce Analytics	3
HRM Concentration Electives		
Note: Students who take HRM 6015 select three elective courses; students waived from HRM 6015 select four elective courses:		9-12

HRM 6005	Creating a High-Performance Organization: Strategic Organizational and HRM Choices	
HRM 6010	Compensation and Benefits	
HRM 6020	Talent Acquisition and Onboarding	
HRM 6030	The Employment Contract	
HRM 6042	Strategic Workforce Planning	
HRM 6047	Managing the Employee Life Cycle	
HRM 6050	Employee Engagement	
HRM 6060	Organizational Design	
HRM 6070	Global Human Resources Management	

PUBLIC AND MEDIA RELATIONS

Code	Title	Hours
Required Courses		
PBR 6100	Introduction to Public Relations	3
PBR 6130	Public Relations Writing Seminar 1	3
PBR 6140	Public Relations Writing Seminar 2	3
PBR 6710	Public Relations Research: Understanding External Audiences	3
Public and Media Relations Electives		
Complete two of the following:		6-7

CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance
DGM 6290	Social Media and Brand Strategy Implementation
PBR 6125	Community Relations and Corporate Social Responsibility

LEADERSHIP

Code	Title	Hours
Required Courses		
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
Leadership Elective		
Complete one of the following:		3
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

PROJECT MANAGEMENT

Code	Title	Hours
Required Courses		
<i>Note: Students with project management experience are not required to take PJM 5900:</i>		
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6005	Project Scope Management	3
PJM 6025	Project Scheduling and Cost Planning	3
PJM 6015	Project Risk Management	3
Project Management Electives		
Note: Students who take PJM 5900 are not required to take a course in this section.		
Complete one of the following:		3
PJM 6125	Project Evaluation and Assessment	
PJM 6135	Project Quality Management	
PJM 6140	Managing Troubled Projects	
PJM 6210	Communication Skills for Project Managers	
PJM 6710	Introduction to Program and Portfolio Management	

SOCIAL MEDIA AND ONLINE COMMUNICATION

Code	Title	Hours
Complete five of the following (CMN 6025, 6045, and 6065 are required):		
CMN 6015	Introduction to the Digital Era: The Power of Social Media ((Students may waiver CMN 6015 if they have social media experience. Please consult with your academic advisor.))	15-18
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	

CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance
CMN 6065	Implementation and Management of Social Media Channels and Online Communities
Complete one (or two, if CMN 6015 has been waived) of the following:	
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era
DGM 6285	Interactive Marketing Fundamentals
DGM 6290	Social Media and Brand Strategy Implementation
TCC 6710	Content Strategy
CMN 6040	Consumer Behaviors in the Online Environment

USABILITY/USER EXPERIENCE

Code	Title	Hours
TCC 6710	Content Strategy	4
TCC 6470	Web Accessibility for Technical Communicators	4
TCC 6490	Usability Testing for Technical Communicators	4
DGM 6268	Usable Design for Mobile Digital Media	4
TCC 6610	Prototyping	2
TCC 6620	Collecting User Data	2

CROSS-CULTURAL COMMUNICATION

Code	Title	Hours
Required Courses		
CMN 6082		
CMN 6085	Strategies for Cross-Cultural Facilitation and Negotiation	3
Complete 12 quarter hours from one of the following:		12
Social Justice Track		
PBR 6100	Introduction to Public Relations	
HSV 6120	Social Inequality, Social Change, and Community Building	
ITC 6045	Information Technology Policy, Ethics, and Social Responsibility	
HRM 6040	High-Performance Human Resources Systems and Development	
International Track		
GST 6100	Globalization and Global Politics and Economics	
GST 6101	Global Literacy, Culture, and Community	
LDR 6145	Global Leadership	
INT 6900	International Field Study Experience	

LEADING COMMUNICATION STRATEGY AND TALENT DEVELOPMENT

Code	Title	Hours
Required Courses		
CMN 6200	Strategic Communications Advisor: Roles and Responsibilities	3
CMN 6201	Managing Communication Resources	3
CMN 6202	Management Symposium	3
Electives		
Complete nine quarter hours:		9

HRM 6020	Talent Acquisition and Onboarding
LDR 6120	Developing Organizational Leadership
PJM 6000	Project Management Practices
PJM 6215	Leading Remote Project Teams
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance

Criminal Justice, MS

Criminal justice and security agencies are under increased scrutiny—challenged to provide efficient and effective services; be transparent in their interactions with the public; and respond to changing local, national, and world conditions. To be successful, justice system leaders need to think strategically, communicate locally, and act ethically while developing comprehensive (and often multijurisdictional) solutions to crime and terrorism problems.

In response, Northeastern University's College of Professional Studies—in collaboration with the School of Criminology and Criminal Justice—offers the Master of Science in Criminal Justice. This innovative online master's degree provides a path to excellence for leaders in law enforcement, courts, private security, and corrections organizations. Academically distinctive, graduate courses in this program emphasize leadership, communication, and ethics—themes that are designed to enhance your leadership capacity and improve your career prospects.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Foundation Courses

Code	Title	Hours
CJS 6020	Contemporary Issues in Criminal Justice Policy	3
CJS 6400	Administration of Justice	3
CJS 6405	Criminological Theory for Criminal Justice Leaders	3
CJS 6415	Legal Decision Making and Leadership	3
CJS 6470	Criminal Justice Capstone (Recommended as the last course)	3

Operations Courses

Code	Title	Hours
CJS 6425	Research Methods	3
CJS 6435	Program Evaluations	3
CJS 6440	GIS, Evidence-Based Learning, and Policy	3
CMN 6050	Crisis Communication	3

Concentration

Complete one of the following six concentrations:

- Community and Family Justice
- Corrections
- Global Criminal Justice
- Leadership
- Policing
- Security

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

COMMUNITY AND FAMILY JUSTICE

Code	Title	Hours
Required Courses		
CJS 6300	Communities and Crime	3
CJS 6330	Youth Justice and Crime	3
CJS 6340	Substance Abuse and Addictions	3
CJS 6305		3
CJS 6135	Intimate Partner Violence	3
Elective		
Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
CJS 6135	Intimate Partner Violence	
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	
CJS 6325	Probation and Parole	
CJS 6330	Youth Justice and Crime	
CJS 6340	Substance Abuse and Addictions	
GST 6300	Security and Terrorism	
LDR 6110	Leading Teams	
LDR 6120	Developing Organizational Leadership	
LDR 6140	Strategy Development and Implementation	
LDR 6360	Dynamics of Change at the Community and Social Level	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

CORRECTIONS

Code	Title	Hours
Required Courses		
Complete five of the following:		15
CJS 6145		
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	
CJS 6325	Probation and Parole	
CJS 6320		
CJS 6340	Substance Abuse and Addictions	
Elective		
Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	

CJS 6025	Genocide and War Crimes
CJS 6030	Organized Crime
CJS 6035	Corruption, Integrity, and Accountability
CJS 6040	Human Trafficking and Exploitation
CJS 6045	Policing Issues around the Globe
CJS 6105	Domestic and International Terrorism
CJS 6125	Issues in National Security
CJS 6135	Intimate Partner Violence
CJS 6300	Communities and Crime
CJS 6315	Administration of the Adult and Juvenile Correction Systems
CJS 6325	Probation and Parole
CJS 6330	Youth Justice and Crime
CJS 6340	Substance Abuse and Addictions
GST 6300	Security and Terrorism
LDR 6110	Leading Teams
LDR 6120	Developing Organizational Leadership
LDR 6140	Strategy Development and Implementation
LDR 6360	Dynamics of Change at the Community and Social Level
INT 6943	Integrative Experiential Learning
EDU 6184	Interdisciplinary Foundations

GLOBAL CRIMINAL JUSTICE

Code	Title	Hours
Required Courses		
Complete five of the following:		15-16
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
GST 6300	Security and Terrorism	
Elective		
Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
CJS 6135	Intimate Partner Violence	
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	
CJS 6325	Probation and Parole	
CJS 6330	Youth Justice and Crime	
CJS 6340	Substance Abuse and Addictions	
GST 6300	Security and Terrorism	

LDR 6110	Leading Teams
LDR 6120	Developing Organizational Leadership
LDR 6140	Strategy Development and Implementation
LDR 6360	Dynamics of Change at the Community and Social Level
INT 6943	Integrative Experiential Learning
EDU 6184	Interdisciplinary Foundations

LEADERSHIP

Code	Title	Hours
Required Courses		
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
Complete one of the following:		3
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

Elective

Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
CJS 6135	Intimate Partner Violence	
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	
CJS 6325	Probation and Parole	
CJS 6330	Youth Justice and Crime	
CJS 6340	Substance Abuse and Addictions	
GST 6300	Security and Terrorism	
LDR 6110	Leading Teams	
LDR 6120	Developing Organizational Leadership	
LDR 6360	Dynamics of Change at the Community and Social Level	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

POLICING

Code	Title	Hours
Required Courses		
Complete five of the following:		15
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6045	Policing Issues around the Globe	
CJS 6050		
CJS 6205		
CJS 6300	Communities and Crime	

CJS 6420		
Elective		
Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
CJS 6135	Intimate Partner Violence	
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	
CJS 6325	Probation and Parole	
CJS 6330	Youth Justice and Crime	
CJS 6340	Substance Abuse and Addictions	
GST 6300	Security and Terrorism	
LDR 6110	Leading Teams	
LDR 6120	Developing Organizational Leadership	
LDR 6140	Strategy Development and Implementation	
LDR 6360	Dynamics of Change at the Community and Social Level	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

SECURITY

Code	Title	Hours
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Required Courses

Complete five of the following:		15-16
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
GST 6300	Security and Terrorism	

Elective

Complete 3 quarter hours from the following:		3
CJS 6005	Legal and Regulatory Issues for Security Management	
CJS 6025	Genocide and War Crimes	
CJS 6030	Organized Crime	
CJS 6035	Corruption, Integrity, and Accountability	
CJS 6040	Human Trafficking and Exploitation	
CJS 6045	Policing Issues around the Globe	
CJS 6105	Domestic and International Terrorism	
CJS 6125	Issues in National Security	
CJS 6135	Intimate Partner Violence	
CJS 6300	Communities and Crime	
CJS 6315	Administration of the Adult and Juvenile Correction Systems	

CJS 6325	Probation and Parole
CJS 6330	Youth Justice and Crime
CJS 6340	Substance Abuse and Addictions
GST 6300	Security and Terrorism
LDR 6110	Leading Teams
LDR 6120	Developing Organizational Leadership
LDR 6140	Strategy Development and Implementation
LDR 6360	Dynamics of Change at the Community and Social Level
INT 6943	Integrative Experiential Learning
EDU 6184	Interdisciplinary Foundations

Global Studies and International Relations, MS

Globalization has created a world of new opportunities for those savvy enough to recognize them and acquire the new skill sets needed for success in international government, consulting, business and industry, nonprofit, and educational sectors.

This program is designed to prepare students for internationally focused positions that range from traditional practitioners of diplomacy, to development workers, to executives employed in the dynamic world of international consultancy, trade, and industry. With courses enriched by classmates from every continent, students are active learners in a collaborative, cross-cultural setting from their very first course.

The core curriculum ensures all students have a solid grounding in foundational courses such as international politics, economics, security, and diplomacy. Students then select from a broad-based menu of concentrations, allowing them to develop specialties. The program culminates in a capstone experience in which students elect to write a thesis, engage in a case study, or undertake short-term travel to conduct intensive field research.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
GST 6100	Globalization and Global Politics and Economics	4
GST 6101	Global Literacy, Culture, and Community	4
GST 6109	Basic Field Research Methods	4
GST 6320	Peace and Conflict	4

Regional Studies Courses

Code	Title	Hours
Complete one of the following:		
GST 6501	Regional Studies: East Asia	
GST 6502	Regional Studies: Middle East	
GST 6503	Regional Studies: Sub-Saharan Africa	
GST 6504	Regional Studies: Europe	
GST 6505	Regional Studies: Southwest and Central Asia	
GST 6506	Regional Studies: Latin America	

Capstone

Code	Title	Hours
Complete one of the following:		4
GST 6920	Case Study in Global Studies	
GST 7990	Thesis	
INT 6900	International Field Study Experience	

Electives

Code	Title	Hours
Complete 2–4 quarter hours from the following:		2-4
GST 7983	Topics	
COP 6940	Personal and Career Development (Requires participation in the cooperative education program.)	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Concentrations

Complete one of the following five concentrations:

- Global Health and Development (p.)
- Conflict Resolution
- Diplomacy
- International Economics and Consulting
- Global Student Mobility

Program Credit/GPA Requirements

46-48 total quarter hours required

Minimum 3.000 GPA required

GLOBAL HEALTH AND DEVELOPMENT

Code	Title	Hours
Complete five of the following (one of the courses can be from another global studies concentration, a regional studies course, or a special topics course if you choose):		20
GST 6210	The Developers	
GST 6340	Poverty and Wealth	
GST 6350	Global Economics of Food and Agriculture	
GST 6610	Sustainable Development	
GST 6700	Global Health Perspectives, Politics, and Experiences in International Development	
GST 6710	Critical Issues and Challenges in the Practice of Global Health	

CONFLICT RESOLUTION

Code	Title	Hours
Complete five of the following (one of the courses can be from another global studies concentration, a regional studies course, or a special topics course if you choose):		20
GST 6324	Divided Societies in the Modern World	
GST 6326	International Conflict and Cooperation	
GST 6327	Conflict and Postconflict Development	
GST 6300	Security and Terrorism	
GST 6360	Nuclear Nonproliferation	
GST 6740	Human Rights	

DIPLOMACY

Code	Title	Hours
Complete five of the following (one of the courses can be from another global studies concentration, a regional studies course, or a special topics course if you choose):		20
GST 6600	The Practice of Diplomacy	
GST 6540	Politics of the European Union	
GST 6550	U.S. Foreign Policy	
GST 6560	Multilateral Diplomacy	
GST 6590	Public Diplomacy	
GST 6740	Human Rights	

INTERNATIONAL ECONOMICS AND CONSULTING

Code	Title	Hours
Complete five of the following (one of the courses can be from another global studies concentration, a regional studies course, or a special topics course if you choose):		20
GST 6580	Opportunities in International Consulting	
GST 6102	Global Corporate and Social Responsibility	
GST 6200	The Funders	
GST 6220	Globalization of Emerging Economies	
GST 6310	Immigration and Labor	
GST 6340	Poverty and Wealth	
GST 6430	Leadership and Management	

GLOBAL STUDENT MOBILITY

Code	Title	Hours
Complete five of the following (one of the courses can be from another global studies concentration, a regional studies course, or a special topics course if you choose):		20
GST 6810	International Higher Education	
GST 6820	Managing Study Abroad	
GST 6830	Managing International Students	
GST 6840	The Business of International Education	
GST 6850	Immigration and Legal Issues in International Higher Education	
GST 6410	Global Education in the Internet Age	

Human Services, MS

Professionals with graduate degrees in human services are needed to address a wide range of societal issues—whether by providing direct services, supervising personnel, or administering programs and policies. Often responsible for working with vulnerable populations, human services professionals must be adept at conducting assessments, developing service plans and policies, leading interdisciplinary teams, and managing care for at-risk clients.

To address this important need, the College of Professional Studies offers the online **Master of Science in Human Services**. In addition to a solid core curriculum, the program offers several electives, as well as concentrations in leadership, organizational communication, and global studies—enabling you to focus your graduate studies in the area that best matches your interests and career objectives. Reflecting Northeastern's philosophy of practice-oriented education, this human services master's degree includes work-based applications and a capstone service-learning

project, offering you an opportunity to deepen your knowledge within your chosen specialty. This human services graduate degree program seeks to produce graduates with the knowledge and skills they need to pursue a leadership role in the fulfilling field of human services.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HSV 6100	<i>Theory and Practice of Human Services</i> (Required as the first course)	3
HSV 6110	Human Services Management and Development	3
HSV 6120	Social Inequality, Social Change, and Community Building	3
HSV 6630	Research and Evaluation in Human Services	3
HSV 6640	Policy Issues in Human Services	3
HSV 6160	Introduction to Employee Assistance Programs	3

The following course should be taken last:

HSV 6980	Capstone	3
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Elective Courses

Code	Title	Hours
Complete three of the following:		9
NPM 6120	Financial Management for Nonprofit Organizations	
NPM 6130	Fundraising and Development for Nonprofit Organizations	
NPM 6140	Grant and Report Writing	
NPM 6150	Human Resources Management in Nonprofit Organizations	
CMN 6015	Introduction to the Digital Era: The Power of Social Media	
CMN 6080	Intercultural Communication	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Concentrations

Complete one of the following concentrations:

GLOBAL STUDIES

Code	Title	Hours
Required Courses		
GST 6100	Globalization and Global Politics and Economics	4
GST 6101	Global Literacy, Culture, and Community	4
GST 6320	Peace and Conflict	4
Elective		
Complete one of the following:		4
GST 6501	Regional Studies: East Asia	
GST 6502	Regional Studies: Middle East	
GST 6503	Regional Studies: Sub-Saharan Africa	
GST 6504	Regional Studies: Europe	

GST 6505	Regional Studies: Southwest and Central Asia
GST 6506	Regional Studies: Latin America

LEADERSHIP

Code	Title	Hours
LDR 6100	<i>Developing Your Leadership Capability</i> (Prerequisite)	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
Choose one of the following courses:		3
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	3/1
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6050	Crisis Communication	3
CMN 6090	Organizational Culture, Climate, and Communication	3
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	3

Program Credit/GPA Requirements

45-46 total quarter hours required
Minimum 3.000 GPA required

Leadership, MS

As today's workforce continues to diversify, leadership tasks and responsibilities have become more complex. The Master of Science in Leadership seeks to prepare you to meet these evolving challenges by helping you cultivate a personal leadership philosophy. Leveraging students' interdisciplinary backgrounds, this master's degree in leadership combines real-world lessons with an action-learning approach that is designed to build and strengthen your leadership capabilities.

In September of 2009, the Master of Science in Leadership with a Concentration in Project Management received accreditation by the Project Management Institute's Global Accreditation Center (GAC), the world's leading association for project management professionals. Accreditation is achieved by meeting the GAC's rigorous standards, which include an assessment of program objectives and outcomes, a review of on-site and online resources, evaluations of faculty and students, and proof of continuous improvements in the area of project management.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LDR 6100	Developing Your Leadership Capability	3
LDR 6101		
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6135	Ethical Leadership	3
LDR 6140	Strategy Development and Implementation	3
LDR 6145	Global Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
LDR 7980	Capstone	4

Concentration

Complete one of the following seven concentrations:

- Health Management (p. 336)
- Human Resources Management (p. 336)
- Leading and Managing Technical Projects (p. 336)
- Nonprofit Management (p. 336)
- Organizational Communication (p. 336)
- Sport and Social Change (p. 337)

Electives

Code	Title	Hours
EDU 6184	Interdisciplinary Foundations	
Complete at least one of the following:		4
CMN 6000	Introduction to Organizational Communication	
LDR 6115	Leadership Communication	
Complete at least one of the following:		4
CMN 6095	Foundations of Developing Cultural Awareness	
COP 6940	Personal and Career Development	
INT 6000	Writing Lab	
INT 6900	International Field Study Experience	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

HEALTH MANAGEMENT

Code	Title	Hours
HMG 6110	Organization, Administration, Financing, and History of Healthcare	3
HMG 6130	Healthcare Strategic Management	3
HMG 6140	Principles of Population-Based Management	3
HMG 6160	Healthcare Information Systems Management	3
HMG 6170	Health Law, Politics, and Policy	3

HUMAN RESOURCES MANAGEMENT

Code	Title	Hours
Required Courses		
HRM 6015	Introduction to Human Resources Management	3
HRM 6025	Workforce Analytics	3
Electives		
Complete three of the following. (Students waived out of HRM 6015, complete four of the following).		9
HRM 6005	Creating a High-Performance Organization: Strategic Organizational and HRM Choices	
HRM 6010	Compensation and Benefits	
HRM 6020	Talent Acquisition and Onboarding	
HRM 6030	The Employment Contract	
HRM 6042	Strategic Workforce Planning	
HRM 6047	Managing the Employee Life Cycle	
HRM 6050	Employee Engagement	
HRM 6060	Organizational Design	
HRM 6070	Global Human Resources Management	

LEADING AND MANAGING TECHNICAL PROJECTS

Code	Title	Hours
PJM 6000	Project Management Practices	3
PJM 6205	Leading and Managing Technical Projects	3
PJM 6210	Communication Skills for Project Managers	3
PJM 6215	Leading Remote Project Teams	3
PJM 6220	Planning and Scheduling Technical Projects	3

NONPROFIT MANAGEMENT

Code	Title	Hours
NPM 6110	Legal and Governance Issues in Nonprofit Organizations	3
NPM 6120	Financial Management for Nonprofit Organizations	3
NPM 6125	Promoting Nonprofit Organizations	3
NPM 6130	Fundraising and Development for Nonprofit Organizations	3
NPM 6140	Grant and Report Writing	3

ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	3/1
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6050	Crisis Communication	3
CMN 6090	Organizational Culture, Climate, and Communication	3
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	3

PROJECT MANAGEMENT

Code	Title	Hours
Required Courses		
Note: Students with project management experience are not required to take PJM 5900:		
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6025	Project Scheduling and Cost Planning	3
PJM 6015	Project Risk Management	3
Electives		
Complete one of the following. (Note: Students who are not required to take PJM 5900 complete two of the following).		3
PJM 6125	Project Evaluation and Assessment	
PJM 6135	Project Quality Management	
PJM 6140	Managing Troubled Projects	
PJM 6710	Introduction to Program and Portfolio Management	

SPORT AND SOCIAL CHANGE

Code	Title	Hours
LDR 6410	Leadership and Organization in Sport	3
GST 6102	Global Corporate and Social Responsibility	4
HSV 6120	Social Inequality, Social Change, and Community Building	3
LDR 6360	Dynamics of Change at the Community and Social Level	3
LDR 6427	Gender and Diversity in Sport	3

Nonprofit Management, MS

Facing the threat of privatization and for-profit competition, nonprofit organizations are challenged to find leaders who not only possess keen business and managerial skills but can also effect change at a community or social level. Being successful in this dynamic and rewarding field requires strong leadership, managerial and interpersonal skills, as well as in-depth knowledge of fund-raising, marketing, program development, and governance issues.

Integrating theoretical approaches with practical applications, the **Master of Science in Nonprofit Management** seeks to prepare you for a leadership position in a not-for-profit university, hospital, charity, foundation, or religious organization. Upon completion of this nonprofit degree, you emerge well-equipped to embark on a career in nonprofit management—prepared, and inspired, to make a meaningful impact.

The mission of the Master of Science in Nonprofit Management at the College of Professional Studies is to offer courses that further develop the students' knowledge, skills, talent, and abilities. Faculty in the program support students' development goals through action-oriented courses that link theoretical learning to practical application. Nonprofit management courses aim to prepare students to be mission-driven executive leaders, managers, employees, and board members in public and private nonprofit organizations.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LDR 6100	Developing Your Leadership Capability	3
NPM 6110	Legal and Governance Issues in Nonprofit Organizations	3
NPM 6120	Financial Management for Nonprofit Organizations	3
NPM 6125	Promoting Nonprofit Organizations	3
NPM 6130	Fundraising and Development for Nonprofit Organizations	3
NPM 6140	Grant and Report Writing	3
NPM 6150	Human Resources Management in Nonprofit Organizations	3
NPM 6980	Capstone	3

Concentration

Complete one of the following concentrations:

- Global Studies
- Human Services
- Leadership
- Organizational Communication
- Project Management
- Social Media and Online Communication
- Sport and Social Change

Electives

Code	Title	Hours
Complete two of the following:		
LDR 6110	Leading Teams	6
LDR 6360	Dynamics of Change at the Community and Social Level	
CMN 6080	Intercultural Communication	
CMN 6050	Crisis Communication	
COP 6940	Personal and Career Development	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Program Credit/GPA Requirements

45–47 total quarter hours required

Minimum 3.000 GPA required

GLOBAL STUDIES

Code	Title	Hours
Required Courses		
GST 6100	Globalization and Global Politics and Economics	4
GST 6101	Global Literacy, Culture, and Community	4
GST 6320	Peace and Conflict	4
Elective		
Complete one of the following:		4
GST 6501	Regional Studies: East Asia	
GST 6502	Regional Studies: Middle East	
GST 6503	Regional Studies: Sub-Saharan Africa	
GST 6504	Regional Studies: Europe	

GST 6505	Regional Studies: Southwest and Central Asia	
GST 6506	Regional Studies: Latin America	

HUMAN SERVICES

Code	Title	Hours
HSV 6100	Theory and Practice of Human Services	3
HSV 6110	Human Services Management and Development	3
HSV 6630	Research and Evaluation in Human Services	3
HSV 6160	Introduction to Employee Assistance Programs	3
HSV 6640	Policy Issues in Human Services	3

LEADERSHIP

Code	Title	Hours
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
LDR 6135	Ethical Leadership	3
LDR 6140	Strategy Development and Implementation	3

ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	3/1
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6050	Crisis Communication	3
CMN 6090	Organizational Culture, Climate, and Communication	3
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	3

PROJECT MANAGEMENT

Code	Title	Hours
Required Courses ¹		
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6005	Project Scope Management	3
PJM 6025	Project Scheduling and Cost Planning	3
PJM 6015	Project Risk Management	3

Electives

Complete one of the following: ²		3
PJM 6125	Project Evaluation and Assessment	
PJM 6135	Project Quality Management	
PJM 6140	Managing Troubled Projects	
PJM 6210	Communication Skills for Project Managers	
PJM 6710	Introduction to Program and Portfolio Management	

SOCIAL MEDIA AND ONLINE COMMUNICATION

Code	Title	Hours
Complete five of the following:		15-17
CMN 6015	Introduction to the Digital Era: The Power of Social Media	
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	
CMN 6065	Implementation and Management of Social Media Channels and Online Communities	
DGM 6285	Interactive Marketing Fundamentals	
DGM 6290	Social Media and Brand Strategy Implementation	

SPORT AND SOCIAL CHANGE

Code	Title	Hours
LDR 6410	Leadership and Organization in Sport	3
GST 6102	Global Corporate and Social Responsibility	4
HSV 6120	Social Inequality, Social Change, and Community Building	3
LDR 6360	Dynamics of Change at the Community and Social Level	3
LDR 6427	Gender and Diversity in Sport	3

¹ This course is required for students who do not have **at least two years** of professional experience working on projects. This course is only intended for those who are not familiar with professional project work. Students with two years or more of professional project experience should not take Foundations of Project Management (PJM 5900).

² Students who take Foundations of Project Management (PJM 5900) are not required to take a course in this section.

Program and Portfolio Project Management, MS

The Master of Science in Program and Portfolio Project Management is intended to prepare project professionals for the more advanced-level roles in the organization. It provides a natural alignment to the professional advancement that exists within industry—from project manager to program manager to portfolio manager. Managing programs and portfolios successfully in any environment requires a unique set of interdisciplinary skills. This program seeks to bring together and train students in those skills that are most critical: program and portfolio management processes and tools, financial analysis, strategic and leadership skills, and communication skills and strategies. Advanced course work in program and project portfolio management will support project professionals in being prepared to focus on formulating strategies appropriate for changing market conditions, prioritizing and funding the appropriate initiatives and/or projects, successfully executing initiatives and/or projects in order to deliver strategic results, and using the lessons from unsuccessful strategy for strategy formulation.

The increasingly important role of program and project portfolio managers is becoming clear as companies orient more and more of their work in a projectized fashion. Another driving factor is better alignment of projects to the firm's strategy, doing the right projects to advance the organization. This has been made clear through the creation of advanced

industry certifications, such as the Program Management Professional (PgMP®) and the Portfolio Management Professional (PfMP®) credential by the Project Management Institute. This Master of Science degree will prepare these individuals with the knowledge, skills, and tools needed to effectively manage project-based programs and portfolios.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PJM 6710	Introduction to Program and Portfolio Management	3
PJM 6715	Advanced Program Management	3
PJM 6720	Advanced Portfolio Management	3
PJM 6725	Program and Portfolio Leadership	3
PJM 6730	Program and Portfolio Evaluation	3
PJM 6735	Program and Portfolio Management Capstone	3
PJM 6740	Managing Program and Portfolio Risk and Complexity	3
PJM 6750	Strategic Management and Decision Making for Program and Project Portfolio Managers	3

Required Electives

Code	Title	Hours
Complete two of the following:		6-7
CMN 6060	Negotiation, Mediation, and Facilitation	
CMN 6090	Organizational Culture, Climate, and Communication	
LDR 6135	Ethical Leadership	
LDR 6150	Innovation and Organizational Transformation	
INT 6943	Integrative Experiential Learning	
INT 6940	Experiential Learning Projects for Professionals	
EDU 6184	Interdisciplinary Foundations	

Concentration

Complete one of the following concentrations:

AGILE PROJECT MANAGEMENT

Code	Title	Hours
Required Courses		
PJM 6810	Principles of Agile Project Management	3
PJM 6815	Advanced Agile Project Management	3
PJM 6820	Agile Implementation and Governance	3
PJM 6825	Agile Lean Product Development	3
Elective		
Complete one of the following:		3
PJM 6205	Leading and Managing Technical Projects	
CMN 6060	Negotiation, Mediation, and Facilitation	

LEADERSHIP

Code	Title	Hours
Required Courses		
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3

Elective

Complete one of the following:		3
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
Required Course		
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	4

Electives

Complete four of the following:		12
CMN 6020	Ethical Issues in Organizational Communication	
CMN 6050	Crisis Communication	
CMN 6060	Negotiation, Mediation, and Facilitation	
CMN 6080	Intercultural Communication	
CMN 6090	Organizational Culture, Climate, and Communication	
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	

PROJECT BUSINESS ANALYSIS

Code	Title	Hours
PJM 6610	Foundations of Project Business Analysis	3
PJM 6620	Project Business Analysis: Needs Assessment	3
PJM 6630	Project Business Analysis: Requirements Planning and Analysis	3
ALY 6000	Introduction to Analytics	3
PJM 6640	Leadership Strategies for the Business Analyst	3

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Project Management, MS

Companies succeed or fail based on their ability to bring quality products and services to market in a timely manner. Without skilled project managers in place, companies are challenged to deliver projects on time, on budget, and according to specifications. From inception to completion, project managers are responsible for every step in the process: project definition, cost and risk estimation, schedule planning and monitoring, budget management, negotiation and conflict resolution, project leadership, and project presentation and evaluation.

The Master of Science in Project Management is designed to provide you with the practical skills and theoretical concepts you need to lead complex projects. Featuring real-world case studies, this project management degree presents techniques and tools for managing long- and short-term projects successfully and cost-effectively. Augmenting the core project management courses are concentrations that seek to provide you with content-specific expertise that enables you to deepen your knowledge in your field of interest.

In September of 2009, the Master of Science in Project Management received accreditation by the Project Management Institute's Global Accreditation Center (GAC), the world's leading association for project management professionals. Accreditation is achieved by meeting the GAC's rigorous standards, which include an assessment of program objectives and outcomes, a review of on-site and online resources, evaluations of faculty and students, and proof of continuous improvements in the area of project management.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Note: Foundations of Project Management (PJM 5900) must be completed *before* taking Project Management Practices (PJM 6000) for students who do not have at least three years of professional experience directing or leading project tasks. This course is highly recommended for students who do not have a basic working knowledge of Microsoft Project software. Students with project management experience are not required to take Foundations of Project Management (PJM 5900):

Code	Title	Hours
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6005	Project Scope Management	3
PJM 6015	Project Risk Management	3
PJM 6025	Project Scheduling and Cost Planning	3
PJM 6135	Project Quality Management	3
The following course should be taken last:		
PJM 6910	Capstone	3

Project Management Required Electives

Code	Title	Hours
Complete two of the following. Note: Students who take PJM 5900 are required to take only one course in this section:		6
PJM 6125	Project Evaluation and Assessment	
PJM 6140	Managing Troubled Projects	
PJM 6145	Global Project Management	
PJM 6710	Introduction to Program and Portfolio Management	

Electives

Code	Title	Hours
Complete two of the following:		5-7
CMN 6000	Introduction to Organizational Communication	
CMN 6005	Foundations of Professional Communication	
CMN 6060	Negotiation, Mediation, and Facilitation	

CMN 6090	Organizational Culture, Climate, and Communication
CMN 6095	Foundations of Developing Cultural Awareness
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management
COP 6940	Personal and Career Development
INT 6943	Integrative Experiential Learning
INT 6940	Experiential Learning Projects for Professionals
PJM 6205	Leading and Managing Technical Projects
PJM 6210	Communication Skills for Project Managers
PJM 6215	Leading Remote Project Teams
PJM 6175	Project Resource Management
PJM 6180	Project Stakeholder Management
EDU 6184	Interdisciplinary Foundations

Concentrations

Complete one of the following concentrations:

- Clinical Trial Design (p.)
- Construction Management (p. 340)
- Geographic Information Systems (p. 341)
- Information Security Management (p.)
- Leadership (p. 341)
- Leading and Managing Technical Projects (p.)
- Organizational Communication (p.)
- Agile Project Management (p. 341)
- **Program and Portfolio Management**
- Project Business Analysis (p.)

Program Credit/GPA Requirements

45–48 total quarter hours required
Minimum 3.000 GPA required

CLINICAL TRIAL DESIGN

Code	Title	Hours
Required Courses		
BTC 6211	Validation and Auditing of Clinical Trial Information	4
BTC 6213	Clinical Trial Design Optimization and Problem Solving	4
PMC 6212	Clinical Drug Development Data Analysis: Concepts	4

Elective

Complete one of the following:		
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	4
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	

CONSTRUCTION MANAGEMENT

Code	Title	Hours
CMG 6400	Introduction to Construction Management	4

CMG 6402	Alternative Project Delivery Methods and Project Controls	4
CMG 6403	Safety, Project Risk, and Quality Management	4
CMG 6405	Construction Law	4

GEOGRAPHIC INFORMATION SYSTEMS

Code	Title	Hours
Required Courses		
GIS 5101	Introduction to Geographic Information Systems	3
GIS 5102	Fundamentals of GIS Analysis	3
RMS 5105	Fundamentals of Remote Sensing	3
GIS 5201	Advanced Spatial Analysis	3
Elective		
Complete one of the following:		3
GIS 6340	GIS Customization	
GIS 6350	Planning a GIS Implementation	
GIS 6370	Internet-Based GIS	
GIS 6360	Spatial Databases	

INFORMATION SECURITY MANAGEMENT

Code	Title	Hours
Required Courses		
ITC 6300	Foundations of Information Security	3
ITC 6315	Information Security Risk Management	3
ITC 6310	Information Security Governance	3
ITC 6320	Information Security Technology	3
Elective		
Complete one of the following:		3
ITC 6020	Information Systems Design and Development	
ITC 6305	IT Infrastructure (Systems, Networks, Telecom)	
ITC 6335	Data Warehousing and Data Mining	
ITC 6345	Systems and Network Administration	

LEADERSHIP

Code	Title	Hours
Required Courses		
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6150	Innovation and Organizational Transformation	3
Elective		
Complete one of the following:		3
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

LEADING AND MANAGING TECHNICAL PROJECTS

Code	Title	Hours
PJM 6205	Leading and Managing Technical Projects	3
PJM 6210	Communication Skills for Project Managers	3

PJM 6215	Leading Remote Project Teams	3
PJM 6220	Planning and Scheduling Technical Projects	3
PJM 6825	Agile Lean Product Development	3

ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
Required Course		
CMN 6000 and INT 6000	Introduction to Organizational Communication and Writing Lab	3-4
Electives		
Complete four of the following:		12
CMN 6020	Ethical Issues in Organizational Communication	
CMN 6050	Crisis Communication	
CMN 6060	Negotiation, Mediation, and Facilitation	
CMN 6080	Intercultural Communication	
CMN 6090	Organizational Culture, Climate, and Communication	
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	

AGILE PROJECT MANAGEMENT

Code	Title	Hours
Students in this concentration are only required to complete one project management required elective.		
PJM 6810	Principles of Agile Project Management	3
PJM 6815	Advanced Agile Project Management	3
PJM 6820	Agile Implementation and Governance	3
PJM 6825	Agile Lean Product Development	3
PJM 6205	Leading and Managing Technical Projects	3

PROGRAM AND PORTFOLIO MANAGEMENT

Code	Title	Hours
Students in this concentration are only required to complete one project management required elective.		
PJM 6710	Introduction to Program and Portfolio Management	3
PJM 6715	Advanced Program Management	3
PJM 6720	Advanced Portfolio Management	3
PJM 6725	Program and Portfolio Leadership	3
PJM 6730	Program and Portfolio Evaluation	3
PJM 6735	Program and Portfolio Management Capstone	3

PROJECT BUSINESS ANALYSIS

Code	Title	Hours
PJM 6610	Foundations of Project Business Analysis	3
PJM 6620	Project Business Analysis: Needs Assessment	3
PJM 6630	Project Business Analysis: Requirements Planning and Analysis	3
ALY 6000	Introduction to Analytics	3
PJM 6640	Leadership Strategies for the Business Analyst	3

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Clinical Research Regulatory Affairs, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors. In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
BTC 6213	Clinical Trial Design Optimization and Problem Solving	4
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 16 quarter hours by choosing at least one course from each elective category.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
Complete at least one of the following:		3-4
BTC 6211	Validation and Auditing of Clinical Trial Information	
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	
RGA 6212	Introduction to Safety Sciences	
RGA 6230	Clinical Laboratory Management in Clinical Trials	

RGA 6310	Regulatory Documentation Processes
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions

REGULATORY PERSPECTIVE: PRODUCT DEVELOPMENT, BUSINESS, AND STRATEGY

Code	Title	Hours
Complete at least one of the following:		2-4
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6235	Emerging Product Categories in the Regulation of Drugs and Biologics	
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	
RGA 6215	Project Management in Early Drug Discovery and Development	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products	
RGA 6250	Financing and Reimbursement in Biomedical Product Development	
RGA 6216	The Medical, Social, and Financial Dimensions of Orphan Drugs	
RGA 6211	Combination Products and Convergence	
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program [subject to availability.] Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)	
INT 6943 and RGA 6920	Integrative Experiential Learning and Internship Reflection	
EDU 6184	Interdisciplinary Foundations	

INTERNATIONAL

Code	Title	Hours
Complete at least one of the following:		4-5
RGA 6228	Managing International Clinical Trials	
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	
RGA 6247	Medicines Regulatory Harmonization in Africa	

SPECIAL TOPICS

Code	Title	Hours
Choose at least one of the following elective options:		
RGA 6242	Preparing EU Medical Device Clinical Evaluations	

RGA 6470	Research Ethics
RGA 6431	Clinical Trial Agreements and Other Key Contracts in the Life Sciences
RGA 6461	Cybersecurity and Regulation of Digital Health Technologies by the FDA
RGA 6432	Real-World Evidence in Biomedical Research
RGA 6420	Global IVD Regulations and Submissions
RGA 6460	Intellectual Property in the Life Sciences
RGA 6431	Clinical Trial Agreements and Other Key Contracts in the Life Sciences
RGA 6410	Fundamentals of CMC Regulations and Methods
RGA 6430	Clinical Trial Quality Oversight

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in General Regulatory Affairs, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors. In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	2
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
RGA 6002	Regulatory Compliance Culture	2
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4

RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 14 quarter hours by choosing at least one course from each category.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
Complete at least one of the following:		3-4
BTC 6211	Validation and Auditing of Clinical Trial Information	
BTC 6213	Clinical Trial Design Optimization and Problem Solving	
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions	
RGA 6212	Introduction to Safety Sciences	
RGA 6230	Clinical Laboratory Management in Clinical Trials	
RGA 6280	Advanced Writing on International Biomedical Topics	
RGA 6310	Regulatory Documentation Processes	
RGA 6370	Advanced Regulatory Writing: Medical Device Submissions	
RGA 6380	Advanced Regulatory Writing: New Drug Applications	
RGA 6233	Application of Quality System Regulation in Medical Device Design and Manufacturing	
RGA 6234	Drug and Device Supplier Risk Management: Compliance and Processes	

REGULATORY PERSPECTIVE: PRODUCT DEVELOPMENT, BUSINESS, AND STRATEGY

Code	Title	Hours
Complete at least one of the following:		2-4
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6215	Project Management in Early Drug Discovery and Development	
RGA 6216	The Medical, Social, and Financial Dimensions of Orphan Drugs	
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	
RGA 6219	Advanced Topics in Advertising and Promotion of Drugs and Medical Devices	
PMC 6212	Clinical Drug Development Data Analysis: Concepts	
RGA 6112	Biomedical Intellectual Property Management Strategy: Patents and Trade Secrets	

RGA 6205	Emerging Trends and Issues in the Medical Device Industry
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs
RGA 6211	Combination Products and Convergence
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products
RGA 6250	Financing and Reimbursement in Biomedical Product Development
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program [subject to availability.] Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)
INT 6943 and RGA 6920	Integrative Experiential Learning and Internship Reflection
EDU 6184	Interdisciplinary Foundations

INTERNATIONAL

Code	Title	Hours
Complete at least one of the following:		4-5
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6222	European Medical Device Regulations	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6227	Emerging Medical Device Markets	
RGA 6228	Managing International Clinical Trials	
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	
RGA 6247	Medicines Regulatory Harmonization in Africa	

SPECIAL TOPICS

Code	Title	Hours
Choose at least one of the following electives:		
RGA 6461	Cybersecurity and Regulation of Digital Health Technologies by the FDA	
RGA 6470	Research Ethics	
RGA 6460	Intellectual Property in the Life Sciences	
RGA 6420	Global IVD Regulations and Submissions	
RGA 6410	Fundamentals of CMC Regulations and Methods	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in International Regulatory Affairs, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors. In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	2
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6204	Legal Issues in International Food, Drug, and Medical Device Regulation	4
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	4
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	2
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 15 quarter hours by choosing at least one course from each elective category.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
Complete at least one of the following:		3-4
BTC 6211	Validation and Auditing of Clinical Trial Information	

BTC 6213	Clinical Trial Design Optimization and Problem Solving
RGA 6212	Introduction to Safety Sciences
RGA 6370	Advanced Regulatory Writing: Medical Device Submissions
RGA 6380	Advanced Regulatory Writing: New Drug Applications
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions

REGULATORY PERSPECTIVE

Code	Title	Hours
Complete at least one of the following:		2-5
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	
RGA 6235	Emerging Product Categories in the Regulation of Drugs and Biologics	
RGA 6205	Emerging Trends and Issues in the Medical Device Industry	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products	
RGA 6211	Combination Products and Convergence	
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program (subject to availability). Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)	
INT 6943 and RGA 6920	Integrative Experiential Learning and Internship Reflection	
EDU 6184	Interdisciplinary Foundations	

INTERNATIONAL

Code	Title	Hours
Complete at least one of the following:		4
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6222	European Medical Device Regulations	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6227	Emerging Medical Device Markets	
RGA 6228	Managing International Clinical Trials	

RGA 6229	Biomedical Product Regulatory Affairs in Emerging Markets: Russia and Kazakhstan
RGA 6211	Combination Products and Convergence
RGA 6244	Therapeutic Product Development in Canada
RGA 6243	Medical Device Product Development in Canada
RGA 6240	
RGA 6249	Chinese Food and Drug Administration Regulation of Biomedical Product Commercialization
RGA 6247	Medicines Regulatory Harmonization in Africa

SPECIAL TOPICS

Code	Title	Hours
Complete at least one of the following:		
RGA 6410	Fundamentals of CMC Regulations and Methods	
RGA 6242	Preparing EU Medical Device Clinical Evaluations	
RGA 6460	Intellectual Property in the Life Sciences	
RGA 6420	Global IVD Regulations and Submissions	
RGA 6246		
RGA 6002	Regulatory Compliance Culture	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Medical Devices, MS

The medical devices regulation concentration within the master's degree for drugs, biologics, and medical devices program enables students to focus specifically on regulatory issues associated with global commercialization of medical device products and services. Medical device regulation, in many aspects, differs substantially from regulation of drug and biologic product commercialization. In addition to significant geographic variability between these product groups from a regulatory perspective, most of the regulatory operational functions associated with commercializing medical device products and services are unique to that product category. Moreover, these differences extend to both the preapproval and postapproval aspects of compliance reporting between the two sets of product groups. Given this variability, the medical devices regulation concentration gives students the opportunity to study the global regulatory marketing approval processes, compliance issues, and operational details specific to this product group. The concentration also enables students to compare and contrast both the similarities and differences between global medical device product and service regulations and those of drug and biologic product regulation.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6370	Advanced Regulatory Writing: Medical Device Submissions	4
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Electives

Code	Title	Hours
Complete 22 quarter hours from the following. At least one elective must be taken from each of the categories below.		22

Regulatory and Clinical Operations

RGA 6233	Application of Quality System Regulation in Medical Device Design and Manufacturing	
RGA 6234	Drug and Device Supplier Risk Management: Compliance and Processes	

Regulatory Perspective: Product Development, Business, and Strategy

RGA 6219	Advanced Topics in Advertising and Promotion of Drugs and Medical Devices	
RGA 6112	Biomedical Intellectual Property Management Strategy: Patents and Trade Secrets	
RGA 6205	Emerging Trends and Issues in the Medical Device Industry	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6211	Combination Products and Convergence	
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program, subject to availability)	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

International

RGA 6222	European Medical Device Regulations	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6227	Emerging Medical Device Markets	
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	

RGA 6247	Medicines Regulatory Harmonization in Africa	
Special Topics		
RGA 6243	Medical Device Product Development in Canada	
RGA 6460	Intellectual Property in the Life Sciences	
RGA 6420	Global IVD Regulations and Submissions	
RGA 6242	Preparing EU Medical Device Clinical Evaluations	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Operational Regulatory Affairs, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors. In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	2
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions	4

RGA 6248	Global Regulatory Operations	2
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 14 quarter hours by completing at least three courses from the lists below.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	
BTC 6211	Validation and Auditing of Clinical Trial Information	
RGA 6212	Introduction to Safety Sciences	
RGA 6310	Regulatory Documentation Processes	
RGA 6370	Advanced Regulatory Writing: Medical Device Submissions	
RGA 6380	Advanced Regulatory Writing: New Drug Applications	

REGULATORY PERSPECTIVE: PRODUCT DEVELOPMENT, BUSINESS, AND STRATEGY

Code	Title	Hours
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6235	Emerging Product Categories in the Regulation of Drugs and Biologics	
RGA 6205	Emerging Trends and Issues in the Medical Device Industry	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products	
RGA 6211	Combination Products and Convergence	
RGA 6112	Biomedical Intellectual Property Management Strategy: Patents and Trade Secrets	
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program [subject to availability.] Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)	
INT 6943 and RGA 6920	Integrative Experiential Learning and Internship Reflection	
EDU 6184	Interdisciplinary Foundations	

INTERNATIONAL

Code	Title	Hours
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6222	European Medical Device Regulations	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	

RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	
RGA 6247	Medicines Regulatory Harmonization in Africa	
RGA 6204	Legal Issues in International Food, Drug, and Medical Device Regulation	

SPECIAL TOPICS

Code	Title	Hours
RGA 6461	Cybersecurity and Regulation of Digital Health Technologies by the FDA	
RGA 6431	Clinical Trial Agreements and Other Key Contracts in the Life Sciences	
RGA 6460	Intellectual Property in the Life Sciences	
RGA 6420	Global IVD Regulations and Submissions	
RGA 6410	Fundamentals of CMC Regulations and Methods	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Regulatory Compliance, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors. In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	2

RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
RGA 6462	Regulatory Compliance in the Pharmaceutical Industry: A Collaborative Approach	4
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 12 quarter hours by completing at least one course from each elective category.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
Complete at least one of the following: 4		
RGA 6212	Introduction to Safety Sciences	
BTC 6213	Clinical Trial Design Optimization and Problem Solving	
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions	
BTC 6211	Validation and Auditing of Clinical Trial Information	
RGA 6230	Clinical Laboratory Management in Clinical Trials	
RGA 6233	Application of Quality System Regulation in Medical Device Design and Manufacturing	
RGA 6234	Drug and Device Supplier Risk Management: Compliance and Processes	

REGULATORY PERSPECTIVE: PRODUCT DEVELOPMENT, BUSINESS, AND STRATEGY

Code	Title	Hours
Complete at least one of the following: 2-4		
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	
RGA 6235	Emerging Product Categories in the Regulation of Drugs and Biologics	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products	
RGA 6205	Emerging Trends and Issues in the Medical Device Industry	
RGA 6211	Combination Products and Convergence	

COP 6940 Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program [subject to availability.] Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)

INT 6943 and RGA 6920 Integrative Experiential Learning and Internship Reflection
EDU 6184 Interdisciplinary Foundations

INTERNATIONAL

Code	Title	Hours
Complete at least one of the following: 4		
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6222	European Medical Device Regulations	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6228	Managing International Clinical Trials	
RGA 6204	Legal Issues in International Food, Drug, and Medical Device Regulation	
RGA 6247	Medicines Regulatory Harmonization in Africa	
RGA 6248	Global Regulatory Operations	

SPECIAL TOPICS

Code	Title	Hours
Complete at least one of the following:		
RGA 6410	Fundamentals of CMC Regulations and Methods	
RGA 6461	Cybersecurity and Regulation of Digital Health Technologies by the FDA	
RGA 6431	Clinical Trial Agreements and Other Key Contracts in the Life Sciences	
RGA 6460	Intellectual Property in the Life Sciences	
RGA 6420	Global IVD Regulations and Submissions	
RGA 6430	Clinical Trial Quality Oversight	
RGA 6002	Regulatory Compliance Culture	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Regulatory Affairs for Drugs, Biologics, and Medical Devices with Concentration in Strategic Regulatory Affairs, MS

The rapid growth of the biomedical product industries and the ever-evolving regulatory landscape have driven high demand for trained regulatory affairs professionals in both the public and private sectors.

In response to this demand, Northeastern University's College of Professional Studies offers the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

This unique graduate degree is designed to both broaden and deepen the student's understanding of current regulations and their practical application in the development of biomedical products. Courses within this program provide students with the opportunity to integrate both scientific knowledge and regulatory perspectives, within the larger context of global commercialization. From discovery through the postmarket phase of product development, this master's degree covers the regulatory and market access requirements to bring a medical product to—and maintain its presence in—the global marketplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	4
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
RGA 6202	Medical Device Development: A Regulatory Overview	4
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	5
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	4
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	4
RGA 6300	Practical Applications in Biomedical Product Global Regulatory Affairs	4

Required Electives

Students must earn a minimum of 16 quarter hours by completing at least one course from each elective category.

REGULATORY AND CLINICAL OPERATIONS

Code	Title	Hours
Complete one of the following:		4
BTC 6211	Validation and Auditing of Clinical Trial Information	
BTC 6213	Clinical Trial Design Optimization and Problem Solving	
RGA 6212	Introduction to Safety Sciences	
RGA 6385	Operational Aspects of Electronic Common Technical Document (eCTD) Submissions	

REGULATORY PERSPECTIVE: PRODUCT DEVELOPMENT, BUSINESS, AND STRATEGY

Code	Title	Hours
Complete one of the following:		2-4
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6463	Regulatory Strategy for Product Development and Life-Cycle Management	

RGA 6216	The Medical, Social, and Financial Dimensions of Orphan Drugs
RGA 6235	Emerging Product Categories in the Regulation of Drugs and Biologics
RGA 6112	Biomedical Intellectual Property Management Strategy: Patents and Trade Secrets
RGA 6205	Emerging Trends and Issues in the Medical Device Industry
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products
RGA 6250	Financing and Reimbursement in Biomedical Product Development
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs
RGA 6211	Combination Products and Convergence
COP 6940	Personal and Career Development (Enrollment in COP 6940 requires participation in the cooperative education program [subject to availability.] Students must complete two of the following four courses prior to enrolling in COP 6940: RGA 6100, RGA 6201, RGA 6202, or BTC 6210.)
INT 6943 and RGA 6920	Integrative Experiential Learning and Internship Reflection
EDU 6184	Interdisciplinary Foundations

INTERNATIONAL

Code	Title	Hours
Complete one of the following:		4-5
RGA 6221	European Union Compliance Process and Regulatory Affairs	
RGA 6222	European Medical Device Regulations	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6227	Emerging Medical Device Markets	
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	
RGA 6204	Legal Issues in International Food, Drug, and Medical Device Regulation	
RGA 6247	Medicines Regulatory Harmonization in Africa	

SPECIAL TOPICS

Code	Title	Hours
Complete one of the following:		
RGA 6410	Fundamentals of CMC Regulations and Methods	
RGA 6461	Cybersecurity and Regulation of Digital Health Technologies by the FDA	

RGA 6432	Real-World Evidence in Biomedical Research
RGA 6460	Intellectual Property in the Life Sciences
RGA 6420	Global IVD Regulations and Submissions
RGA 6246	

Program Credit/GPA Requirements

45 total quarter hours required

Minimum 3.000 GPA required

Regulatory Affairs of Food and Food Industries, MS

The Master of Science in Regulatory Affairs of Food and Food Industries is designed to offer a combination of theory and practical training for professionals looking to enter into, or advance in, the field of food regulatory affairs.

Our courses and curriculum are cross disciplinary, covering topics and methods that lie at the intersection of the life sciences, agricultural planning, food science, nutrition, law, economics, international relations, and regulatory policy. The breadth of the curriculum provides students from various educational and employment backgrounds with the opportunity to contribute to an evolving market.

Successful graduates of the program will gain the necessary knowledge and requisite skills to serve as leaders in the domain of food regulatory affairs. They will be equipped to serve instrumental roles in the formation of public policies, the implementation of regulatory guidelines, industry's compliance with regulations, and the regulatory strategies of companies looking to create a sustainable competitive advantage in the food industry.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RFA 6100	Introduction to Regulatory Affairs of Food and Food Industries	3
RFA 6110	From Farm to Family Table: Understanding the Food Regulatory Life Cycle	3
RFA 6120	Economic and Social Aspects of Food	3
RFA 6130	Food Law in the United States	3
RFA 6200	Comparing U.S. Regulatory Systems and Agencies	3
RFA 6215	Risk Analysis and Hazard Analysis in the Food Industry	3
RFA 6225	Introduction to Food Science	3
RFA 6235	Regulatory Differences and Similarities: An International Investigation	3
RFA 6300	Capstone: Regulatory Affairs of Food	3

Elective Courses

REGULATORY PROCESSES

Code	Title	Hours
Complete two of the following: 8		
RFA 6205	Key Submissions for Food Regulatory Affairs	
RFA 6210	Food Safety and Modernization	
RFA 6220	Food Safety and Surveillance: Concepts and Applications	
RFA 6230	The Scientific, Social, and Commercial Aspects of Genetically Modified Foods	

BUSINESS AND MARKETING

Note: Personal and Career Development (COP 6940) or Integrative Experiential Learning (INT 6943) may only count toward one of the business and marketing elective courses. Enrollment in either of these courses requires participation in the cooperative education program (<http://www.cps.neu.edu/degree-programs/internships-co-ops>) (subject to availability).

Code	Title	Hours
Complete two of the following: 4-8		
RFA 6310	Food Across International Borders: The International Food Trade	
RFA 6315	From Farm to Dinner Table: The Industrialization and Commercialization of Food	
RFA 6350	Political, Social, and Economic Influences on Food Law, Regulation, and Policy	
NTR 6155	Nutrition Entrepreneurship	
NTR 6165	Food and Society	
COP 6940	Personal and Career Development	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

INTERNATIONAL FOOD REGULATIONS

Code	Title	Hours
Complete two of the following: 8		
RFA 6410	Landmark Changes in International Food Policy	
RFA 6411	International Surveillance and Regulation of Food	
RFA 6412	FDA Model Food Code: Implications for Industry	
RFA 6413	Total Food Protection from Farm to Fork	
GST 6350	Global Economics of Food and Agriculture	

Program Credit/GPA Requirements

48–56 total quarter hours required

Minimum 3.000 GPA required

Respiratory Care Leadership, MS

Emerging environmental issues, recent technological advances, and a growing elderly population are escalating the need for skilled respiratory therapists. To be successful, today's respiratory care leaders must

be skilled educators, practitioners, and case managers. In response, Northeastern University's College of Professional Studies has developed the Master of Science in Respiratory Care Leadership.

Created for practicing respiratory therapists, this master's degree in respiratory care incorporates an action-learning approach that seeks to build leadership competencies and to advance your clinical knowledge. Core respiratory care courses cover areas such as advanced cardiopulmonary physiology and research design. In addition, you have the opportunity to focus your studies in one of four concentrations: adult and organizational learning, clinical trial design, health management, and respiratory specialty practice.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Respiratory Care Courses

Code	Title	Hours
RPT 7200	Advanced Cardiopulmonary Physiology	4
RPT 7205	The Evolving Roles of Respiratory Care Professionals	4
RPT 7210	Research Design	4
RPT 7215	Applied Research in Respiratory Care	4
RPT 7300	Development of Clinical Practice Guidelines and Respiratory Care Protocols	4
RPT 7302	Respiratory Therapist Education	4

Required Leadership Courses

Code	Title	Hours
Complete two of the following:		6-12
LDR 6100	Developing Your Leadership Capability	
LDR 6110	Leading Teams	
LDR 6135	Ethical Leadership	
LDR 6140	Strategy Development and Implementation	

Concentration

Complete one of the following concentrations:¹

ADULT AND ORGANIZATIONAL LEARNING

Code	Title	Hours
Complete four of the following:		16
EDU 6051	Culture, Equity, Power, and Influence	
EDU 6201	The Landscape of Higher Education	
EDU 6202	Faculty, Curriculum, and Academic Community	
EDU 6221	Enrollment, Retention, Graduation, Success	
EDU 6319	How People Learn	
EDU 6323	Technology as a Medium for Learning	
EDU 6447	The Demographics of Higher Education	

CLINICAL TRIAL DESIGN

Code	Title	Hours
Complete four of the following:		16
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	

BTC 6211	Validation and Auditing of Clinical Trial Information
BTC 6213	Clinical Trial Design Optimization and Problem Solving
BTC 6260	The Business of Medicine and Biotechnology
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation
RGA 6202	Medical Device Development: A Regulatory Overview
RGA 6205	Emerging Trends and Issues in the Medical Device Industry

HEALTH MANAGEMENT

Code	Title	Hours
Complete five of the following:		15
HMG 6110	Organization, Administration, Financing, and History of Healthcare	
HMG 6120	Human Resource Management in Healthcare	
HMG 6130	Healthcare Strategic Management	
HMG 6140	Principles of Population-Based Management	
HMG 6160	Healthcare Information Systems Management	
HMG 6170	Health Law, Politics, and Policy	
NPM 6120	Financial Management for Nonprofit Organizations	
NPM 6125	Promoting Nonprofit Organizations	
NPM 6130	Fundraising and Development for Nonprofit Organizations	

RESPIRATORY SPECIALTY PRACTICE

Code	Title	Hours
RPT 7400	Pulmonary Diseases and Disorders	4
RPT 7401	Cardiopulmonary Assessment and Diagnostics	4
Complete two of the following:		8
RPT 7402	Adult Critical Care	
RPT 7403	Neonatal and Pediatric Care	
RPT 7404	Pulmonary Wellness Education and Coordination	
RPT 7405	Development of Patient Management Plans	

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

¹ Interdisciplinary Foundations (EDU 6184) may be taken as an elective.

Technical Communication, MS

A proliferation of new technologies and applications has heightened the call for professionals who can communicate complex technical

ideas succinctly and articulately. In response, Northeastern University's College of Professional Studies offers the Master of Science in Technical Communication.

This online master's degree is designed to improve your technical communication skills and to provide you with a foundation for applying those skills across a variety of contexts. With three concentrations from which to choose—computer industry writing, social media and online communities, or usability/user experience—this graduate degree in technical communication seeks to prepare you for a rewarding career as a technical writer, editor, tool expert, or technical trainer.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
TCC 6100	Introduction to Technical and Professional Writing	4
TCC 6102	Editing Technical Content	4
TCC 6110	Information Architecture	4
TCC 6120	Usability and User Experience	4
The following course should be taken last:		
TCC 6850	Technical Communications Capstone Project	4

Concentration

If students prefer to focus their studies on a particular concentration, they may select 16–18 quarter hours from one of the concentrations below and complement their studies with 8–10 quarter hours of elective courses to meet the minimum 46-quarter-hour degree requirement.

Students are not required to complete a concentration. Any combination of 26 quarter hours from concentration and elective courses will satisfy degree requirements.

COMPUTER INDUSTRY WRITING

Code	Title	Hours
Complete four of the following:		16
TCC 6430	Writing for the Computer Industry	
TCC 6440	Advanced Writing for the Computer Industry	
TCC 6400	Structured Documentation	
TCC 6450	Managing Technical Publications	
TCC 6410	Online Documentation	
TCC 6630	Introduction to XML	

SOCIAL MEDIA AND ONLINE COMMUNITIES

Code	Title	Hours
Required Course		
TCC 6710	Content Strategy	4
Electives		
Complete 12–14 quarter hours from the following:		12-14
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	

CMN 6065	Implementation and Management of Social Media Channels and Online Communities
DGM 6285	Interactive Marketing Fundamentals
DGM 6290	Social Media and Brand Strategy Implementation

USABILITY/USER EXPERIENCE

Code	Title	Hours
Choose any combination of the following courses to complete 16 quarter hours:		16
TCC 6710	Content Strategy	
TCC 6470	Web Accessibility for Technical Communicators	
DGM 6268	Usable Design for Mobile Digital Media	
TCC 6610	Prototyping	
TCC 6620	Collecting User Data	
TCC 6420	Information Design for the Web	

Electives

Code	Title	Hours
Choose a combination of 8–10 quarter hours of electives from the list below and any concentration courses listed above:		8-10
TCC 6480	Instructional Design for Technical Communicators	
TCC 6640	Wiki-Based Documentation	
TCC 6495	Document Design	
TCC 6150	Writing Portfolio	
EDU 6184	Interdisciplinary Foundations	

Program Credit/GPA Requirements

46 total quarter hours required
Minimum 3.000 GPA required

Sports Leadership, MSLD

The practice-oriented sports leadership master's degree is structured to accommodate midcareer athletic administrators and coaches, as well as individuals seeking to prepare for careers in the sports industry.

Developed in collaboration with Northeastern University's Center for the Study of Sport in Society, the Master of Sports Leadership seeks to prepare you for a variety of sport-related occupations—whether it's working with a professional or intercollegiate sports team; with a fitness club or wellness organization; or in marketing, communication, or sports management. Courses within this unique graduate degree examine the social and business issues that are critical to sports leadership. Offered in an online format with an intensive one-week summer institute in Boston, this practice-oriented degree seeks to provide you with a well-rounded educational experience, equipping you to advance your career in the sports industry.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Note: Sport in Society (LDR 6405) and Sports Media Relations (LDR 6441) are summer institute courses, available on-campus in Boston. Winter institute course available on campus in Charlotte, North Carolina.

Code	Title	Hours
LDR 6100	Developing Your Leadership Capability	3
LDR 6135	Ethical Leadership	3
LDR 6405	Sport in Society	3
LDR 6410	Leadership and Organization in Sport	3
LDR 6430	Sports Law	3
LDR 6441	Sports Media Relations	3

Internship/Capstone

Code	Title	Hours
Complete one of the following. This course should be the last course taken and requires faculty advisor approval:		3
LDR 6961	Internship	
LDR 6980	Capstone	

Elective Courses

Code	Title	Hours
Choose two of the following:		6
CMN 6015	Introduction to the Digital Era: The Power of Social Media	
LDR 6443	Ticket Sales and Strategies	
LDR 6470	Bystander Strategies for the Prevention of Gender-Based Violence	
INT 6943	Integrative Experiential Learning	
EDU 6184	Interdisciplinary Foundations	

Concentration

PROFESSIONAL SPORTS ADMINISTRATION

Code	Title	Hours
LDR 6323	Event Management	3
LDR 6400	Sports Management	3
LDR 6435	Fiscal Practices in Sports	3
LDR 6440	Sports Marketing and Promotions	3
LDR 6445	Corporate Sponsorships	3
LDR 6460	Risk Management in Athletics	3

COLLEGIATE ATHLETICS ADMINISTRATION

Code	Title	Hours
LDR 6400	Sports Management	3
LDR 6427	Gender and Diversity in Sport	3
LDR 6442	Athletic Fund-Raising	3
LDR 6455	NCAA Compliance	3
LDR 6465	Title IX	3
LDR 6615	Academic Advising for Student-Athletes	3

Program Credit/GPA Requirements

45 total quarter hours required
Minimum 3.000 GPA required

Graduate Certificate Programs

Enhance your skills and career potential with a graduate certificate from Northeastern University's College of Professional Studies. We offer over 355 certificates that represent fast-growing fields such as education, project management, leadership, and technology. **Courses are delivered online, on campus, or in a blended format**, offering you maximum flexibility and convenience for your busy schedule.

Programs

- 3-D Animation (p. 354)
- Adult and Organizational Learning (p. 354)
- Advanced Study in Orthopedics (p. 354)
- Agile Project Management (p. 355)
- Biopharmaceutical (p. 357) Domestic (p. 357) Regulatory Affairs (p. 357)
- Cloud Computing Application and Management (p. 355)
- Collegiate Athletics Administration (p. 356)
- Computer Industry Writing (p. 356)
- Construction Management (p. 356)
- Cross-Cultural Communication (p. 356)
- Digital Media Management (p. 357)
- Digital Video (p. 357)
- E-Learning and Instructional Design (p. 358)
- Emergency Management (p. 358)
- Financial Markets and Institutions (p. 359)
- Forensic Accounting (p. 359)
- Game Design (p. 359)
- Geographic Information Systems (p. 359)
- Global Student Mobility (p. 360)
- Global Studies and International Relations (p. 360)
- Health Management (p. 361)
- Higher Education Administration (p. 361)
- Human-Centered Informatics (p. 362)
- Human Resources Management (p. 362)
- Information Security Management (p. 362)
- Interactive Design (p. 363)
- Interdisciplinary Professional Studies (p. 363)
- International Biopharmaceutical Regulatory Affairs (p. 364)
- Leadership (p. 365)
- Leading and Managing Technical Projects (p. 365)
- Leading Communication Strategy and Talent Development (p. 366)
- Learning Analytics (p. 366)
- Medical Devices Regulatory Affairs (p. 367)
- Nonprofit Management (p. 367)
- Organizational Communication (p. 367)
- Port Security (p. 368)
- Professional Sports Administration (p. 368)
- Program and Portfolio Management (p. 368)
- Project Business Analysis (p. 369)
- Project Management (p. 369)
- Public and Media Relations (p. 369)
- Remote Sensing (p. 370)
- Respiratory Specialty Practice (p. 370)

- Social Media and Online Communities (p. 371)
- Teaching English to Speakers Of Other Languages (p. 371)

3-D Animation, Graduate Certificate

Three-D animation is not only a major component in the film and broadcast industries, it is also a crucial element in online entertainment and a driving force for the gaming industry. Companies use animation in advertisements, websites, and training programs. The growing use of gaming technologies in education and industry (often referred to as Serious Games) has given rise to a need for skilled animators who can work closely with business and academic institutions.

The Graduate Certificate in 3D Animation offers a practice-oriented approach to the art and science of animation, with a particular emphasis on the special requirements of 3D modeling and animating for the gaming industry. Course work is designed to develop students' powers of visualization as well as provide a conceptual basis for visual narrative. The program seeks to produce graduates who are skilled in the use of industry-standard animation applications; understand visual principles of lighting, modeling, and surfacing; and are conversant with motion and special effects compositing.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Course

Code	Title	Hours
<i>Complete one of the following. Note: For students with a portfolio waiver, DGM 6450 is the core course:</i>		
DGM 6105	Visual Communications Foundation	4
DGM 6450	Animation Basics	

Required Courses

Code	Title	Hours
DGM 6122	Foundations of Digital Storytelling	4
DGM 6510	3-D Modeling	4
DGM 6530	Character Animation	4
DGM 6540	Compositing	4
DGM 6882	Animation Reel	1-4

Program Credit/GPA Requirements

22 total quarter hours required
Minimum 3.000 GPA required

Adult and Organizational Learning, Graduate Certificate

From globalization to technology, economic volatility to talent management, there is an increasing need to educate today's workforce for competitive advantage. To meet these needs, trainers, executive development professionals, human resource managers, and educators must stay current in adult and organizational learning.

The Graduate Certificate in Adult and Organizational Learning is designed to provide participants with foundational knowledge in adult learning, needs assessment, and program review. Students have an opportunity to gain expertise and understanding of the methods and models available for instruction, delivery channels, and overall program development.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Core Courses

Code	Title	Hours
EDU 6319	How People Learn	4
EDU 6323	Technology as a Medium for Learning	4
Complete one of the following:		4
EDU 6324	Competencies, Assessment, and Learning Analytics	
EDU 6437	Assessment in Education	
Complete one of the following:		4
EDU 6331	E-Learning Design as a Collaborative Profession	
EDU 6450	The Globalization of Education	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Advanced Study In Orthopedics, Graduate Certificate

The Northeastern University Graduate Certificate in Advanced Study of Orthopedics is designed for licensed physical therapists interested in developing advanced skills in orthopedic physical therapy. This program will consist of five courses (18 credits) and be taught 100 percent online. The online design of the program will provide practicing physical therapists the flexibility to adapt to their demanding schedules, save time on travel, and complete the program from the comfort of their homes. The program can be completed in 18 to 36 months with fall, winter, and summer start dates. The online format will foster the development of critical reflective thinking through case studies and discussions focusing on the most current information in orthopedic physical therapy.

Program Objectives

- Prepare physical therapists to integrate the current research into their orthopedic clinical practice
- Apply knowledge of the anatomy and biomechanics to the evaluation and treatment of the musculoskeletal system
- Interpret and analyze medical and physical examination findings based on the Patient/Client Management Model
- Analyze current surgical interventions for the musculoskeletal system as it applies to physical therapy care
- Provide the student with the knowledge and skills required to sit for the American Physical Therapy Association's Board of Physical Therapy Specialist Orthopaedic clinical specialization examination

Note: Contact Eric Folmar, program director, for further information: e.folmar@neu.edu (e.folmar@neu.edu?subject=CPS Website Inquiry) or 617.304.9253.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
PTH 6560	Patient Management Models and Evidence-Based Practice in Orthopedics	2

PTH 6561	Evidence-Based Examination and Outcomes for the Cervical-Thoracic Spine and Temporomandibular Joint	4
PTH 6562	Evidence-Based Examination and Outcomes for Upper Extremity: Shoulder, Elbow, and Hand	4
PTH 6563	Evidence-Based Examination and Outcomes for Lumbar Spine and Sacroiliac Joint	4
PTH 6564	Evidence-Based Examination and Outcomes for Lower Extremity: Hip, Knee, Foot, and Ankle	4

An optional two-and-a-half-day hands-on lab that will include components of each of the courses (upper extremity, lower extremity, spine) will be offered each spring. People enrolled in the program will have the option to take the hands-on labs for an extra fee.

Program Credit/GPA Requirements

18 total quarter hours required
 Minimum 3.000 GPA required

Agile Project Management, Graduate Certificate

Northeastern University’s graduate certificate in agile is designed to empower students to explore agile principles and practice and remain up-to-date with current trends in the agile framework. The increasingly important role of agile practitioners and managers is becoming clear as agile business development processes are being adopted by major companies because of its high degree of success in achieving improved time to market, reducing costs, and increasing overall customer satisfaction.

The graduate certificate in agile is led by highly credentialed faculty members that are agile practitioners with decades of experience in helping companies successfully implement agile in their organizations.

Through courses you take online, our agile graduate certificate project management curriculum will give you the opportunity to:

- Develop a strong framework and understanding of the role of agile management
- Develop an understanding of the agile management processes and methodologies
- Develop an understanding of how an agile approach to managing projects can deliver value to the organization
- Develop a personal leadership strategy for success as an agile practitioner
- Develop an agile evaluation plan to measure success

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PJM 6810	Principles of Agile Project Management	3
PJM 6815	Advanced Agile Project Management	3
PJM 6820	Agile Implementation and Governance	3
PJM 6825	Agile Lean Product Development	3

PJM 6205	Leading and Managing Technical Projects	3
CMN 6060	Negotiation, Mediation, and Facilitation	3

Program Credit/GPA Requirements

18 total quarter hours required
 Minimum 3.000 GPA required

Cloud Computing Application and Management, Graduate Certificate

Cloud computing is the delivery of computing services over the internet. Due to the relatively lower cost of IT solutions, many organizations have started to take advantage of cloud services provided by Amazon Web Services, Microsoft Azure, IBM Cloud and Softlayer, Google Cloud Platform, Salesforce, and so on. These web service providers offer a broad range of global cloud-based IT products, including computing technologies, storage, databases, analytics, networking, mobile, developer tools, management tools, Internet of Things connectivity, and security and enterprise applications. These services can help organizations move faster, facilitate agile development, and better manage scalability.

The cloud computing application and management (CCA&M) graduate certificate offers students an opportunity to develop technical and management skills to address the needs of enterprise IT services. They will study theoretical and practical aspects of distributed systems from both technical and business perspectives. Successful students will be able to identify frameworks, techniques, and existing IT solutions to manage internet services at different levels (infrastructure, platform, and software). Students in the CCA&M graduate certificate program will also be able to demonstrate the ability to use APIs to integrate applications and business operations into the cloud. They can be directly employed by web service providers or instead work as IT solutions managers in organizations that contract with web service providers.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
Required Courses		
ITC 6420	Introduction to Cloud Computing Applications and Management	3
ITC 6450	Advanced Cloud Computing Applications and Management	3
ITC 6015	Enterprise Information Architecture	3
ITC 6320	Information Security Technology	3
ITC 6355	Web Application Design and Development	3

Elective

Complete one of the following:		3-4
ITC 6082	Network Protection	
ITC 6460	Cloud Analytics	
ITC 6470	Enterprise Data Storage and Management Technologies	

Program Credit/GPA Requirements

18 total quarter hours required
 Minimum 3.000 GPA required

Collegiate Athletics Administration, Graduate Certificate

College athletics in the United States is comprised of more than 1,200 schools, conferences, and organizations that collectively invest in the well-being of student-athletes—both on and off the field.

The Graduate Certificate in Collegiate Athletics Administration offers students an opportunity to obtain an in-depth understanding of the largest amateur segment of the sports industry. Through the program's curriculum, students will be given the opportunity to acquire leadership skills and knowledge in a variety of collegiate athletics topics including sports management, NCAA compliance, fund-raising, academic advising, gender and diversity in sport, and Title IX legislation.

Upon completion, all credits earned in the collegiate athletics administration certificate can also be applied directly into the Master of Sports Leadership (p. 352) program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LDR 6400	Sports Management	3
LDR 6427	Gender and Diversity in Sport	3
LDR 6442	Athletic Fund-Raising	3
LDR 6455	NCAA Compliance	3
LDR 6465	Title IX	3
LDR 6615	Academic Advising for Student-Athletes	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Computer Industry Writing, Graduate Certificate

The Graduate Certificate in Computer Industry Writing delivers in-demand technical writing and editing skills used in high-tech companies. You'll have the opportunity to develop several types of technical documentation, including online help, user manuals, screencasts, quick reference guides, and a DITA project. Our courses also give you ample exposure to popular software tools used by technical communicators in the field today. Courses from this certificate also serve as a concentration the Master of Science in Technical Communication (MSTC). You can directly apply the certificate courses to the MSTC.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
TCC 6400	Structured Documentation	4
TCC 6410	Online Documentation	4
TCC 6430	Writing for the Computer Industry	4
TCC 6440	Advanced Writing for the Computer Industry	4

TCC 6630	Introduction to XML	2
TCC 6150	Writing Portfolio	2

Program Credit/GPA Requirements

20 total quarter hours required
Minimum 3.000 GPA required

Construction Management, Graduate Certificate

Over the last two decades, construction in both the public and private sector has become increasingly complex, requiring construction and project managers to have a stronger skill base to be successful in acquiring and executing projects.

The Graduate Certificate in Construction Management is intended to serve owners' representatives, consulting engineers, architects, design engineers, contractors, and subcontractors. Individuals who have a bachelor's degree, but not necessarily in construction, and who have been identified by their companies as having high potential for advancement are also good candidates for this program.

Courses from this certificate may be applied toward the Master of Science in Project Management.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
CMG 6400	Introduction to Construction Management	4
CMG 6402	Alternative Project Delivery Methods and Project Controls	4
CMG 6403	Safety, Project Risk, and Quality Management	4
CMG 6405	Construction Law	4

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Cross-Cultural Communication, Graduate Certificate

The Graduate Certificate in Cross-Cultural Communication will help to equip professionals with the knowledge and competencies to:

- Analyze personal cross-cultural awareness and implicit bias, in addition to interpret organizational cross-cultural communication strategy to develop effective communication processes and activities
- Evaluate communication audiences from a holistic perspective, thereby constructing effective verbal and nonverbal interactions based on cross-cultural consumption
- Formulate enlightened cross-cultural communication and inclusive diversity strategies, processes, and policies
- Demonstrate critical thinking skills through research, case analysis, role-plays, and experiential learning demonstrating agility, quick response, and diplomacy employing cross-cultural communication strategies

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
CMN 6085	Strategies for Cross-Cultural Facilitation and Negotiation	3
CMN 6095	Foundations of Developing Cultural Awareness	3

Required Electives

Students must earn a minimum of 12 quarter hours.

SOCIAL JUSTICE TRACK

Code	Title	Hours
PBR 6100	Introduction to Public Relations	3
HSV 6120	Social Inequality, Social Change, and Community Building	3
ITC 6045	Information Technology Policy, Ethics, and Social Responsibility	3
HRM 6040	High-Performance Human Resources Systems and Development	3

INTERNATIONAL TRACK

Code	Title	Hours
GST 6100	Globalization and Global Politics and Economics	4
GST 6101	Global Literacy, Culture, and Community	4
LDR 6145	Global Leadership	3
HRM 6040	High-Performance Human Resources Systems and Development	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Digital Media Management, Graduate Certificate

The digital media market space can present unexpected challenges to standard business models. The Graduate Certificate in Digital Media Management offers courses designed to help managers apply best business practices to these nontraditional challenges. Students are offered the opportunity to gain skills in managing functionally diverse digital media teams, responding effectively to response-critical projects, and implementing marketing strategy in a variety of media channels.

Courses in the program were selected by faculty from the College of Professional Studies' Master of Professional Studies in Digital Media. The certificate consists of one core course selected from the MPS in Digital Media (p. 321) curriculum combined with existing concentration courses.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
DGM 6145	Information Technology and Creative Practice	4

DGM 6279	Project Management for Digital Media	4
DGM 6280	Managing for Digital Media	4
DGM 6285	Interactive Marketing Fundamentals	4

Electives

Code	Title	Hours
Complete one of the following:		
DGM 6230	Digital Media Entrepreneurship	4
DGM 6290	Social Media and Brand Strategy Implementation	

Program Credit/GPA Requirements

20 total quarter hours required
Minimum 3.000 GPA required

Digital Video, Graduate Certificate

With the quality and ease of use of digital video camcorders, anyone can capture moving images, but the result is like a Stradivarius violin: It takes training to make music. The Graduate Certificate in Digital Video is a hands-on introduction to digital video technologies, as well as an examination of the social, cultural, and political implications of moving-image production in the digital age. Students have an opportunity to gain competency in digital production and postproduction while exploring various formal, conceptual, and structural strategies. Students will also have an opportunity to learn to generate digital video that communicates effectively and inventively, in preparation for positions in the creative industries of gaming, design, and media production.

The courses in this program also serve as a concentration in the Master of Professional Studies in Digital Media.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
DGM 6506	Introduction to Digital Video	2
DGM 6435	Digital Video Production	4
DGM 6440	Editing in the Digital Studio	4

Electives

Code	Title	Hours
Complete two of the following:		
DGM 6125	Time-Based Media	
DGM 6430	Screenwriting: Linear and Interactive	
DGM 6545	Documentary and Nonfiction Production	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Biopharmaceutical Domestic Regulatory Affairs, Graduate Certificate

The biotechnology and pharmaceutical industries continue to experience rapid growth in the U.S. market. As companies in these industries seek

approval to market their products in the United States, demand for qualified regulatory affairs professionals continues to increase. Product development scientists, marketers, quality personnel, as well as legal experts that guide companies through the Food and Drug Administration (FDA) approval process, will benefit from regulatory affairs training.

The Graduate Certificate in Biopharmaceutical Domestic Regulatory Affairs is designed to provide students with a greater understanding of U.S. biologic and pharmaceutical product regulation and their unique development, marketing, manufacturing, and postmarket approval-related issues. The program also seeks to prepare students to ensure regulatory compliance, proper validation, and utilization of proper quantitative measurement techniques. Courses from this certificate may be applied toward the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6000	Introduction to Food and Drug Administration (FDA) Pharmaceutical Regulation	2
RGA 6101	Therapeutic Product Development: A Regulatory Overview	4
Complete the appropriate number of electives to meet the minimum quarter-hour requirement:		10-12
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	
RGA 6002	Regulatory Compliance Culture	
RGA 6203	Pharmaceutical and Medical Device Law: Topics and Cases	
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6212	Introduction to Safety Sciences	
RGA 6215	Project Management in Early Drug Discovery and Development	
RGA 6216	The Medical, Social, and Financial Dimensions of Orphan Drugs	
RGA 6217	Biomedical Product Development: From Biotech to Boardroom to Market	
RGA 6380	Advanced Regulatory Writing: New Drug Applications	
RGA 6410	Fundamentals of CMC Regulations and Methods	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

e-Learning and Instructional Design, Graduate Certificate

The e-learning and instructional design certificate increases opportunities for professional diversification and advancement as the contemporary landscape of learning increasingly requires a digital component. This

curriculum is designed to prepare professionals to design pedagogically sound online, blended, and technology-enhanced educational experiences from stand-alone workshops to program suites.

Certificate participants investigate the latest research on the science of learning, draw on research-based principles to design engaging online and mobile environments, and become prepared to respond innovatively to societal and institutional changes that impact the field of online and mobile education.

Students will have the option of applying their four courses toward the e-learning and instructional design MEd program if they decide to pursue that degree.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6319	How People Learn	4
EDU 6321	Models for Learning Design	4
EDU 6323	Technology as a Medium for Learning	4

Elective

Code	Title	Hours
Complete one of the following:		4
EDU 6324	Competencies, Assessment, and Learning Analytics	
EDU 6331	E-Learning Design as a Collaborative Profession	
EDU 6332	Open Learning	
EDU 6333	Social Media and Beyond	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Emergency Management, Graduate Certificate

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HLS 6060	Strategic Planning and Budgeting	3
HLS 6070	Emergency Management and Geographic Information Systems	3
HLS 6080	Continuity of Operations and Planning	3
HLS 6150	Essentials of Emergency Management	3
HLS 6155	Critical Infrastructure, Security, and Emergency Management	3
HLS 6160	Advanced Emergency Management	3
HLS 6170	Emergency Management Capstone	3

Program Credit/GPA Requirements

21 total quarter hours required
Minimum 3.000 GPA required

Financial Markets and Institutions, Graduate Certificate

In this rapidly changing business environment, the barriers between institutions are eroding, and competition is increasing due to deregulation and new product development. Managing internal operations more efficiently and adapting to the changing external environment is critical to the long-term survival of institutions. The Graduate Certificate in Financial Markets and Institutions seeks to prepare students to measure the impact of accounting decisions on performance; to manage risks, assets, and liabilities to meet corporate goals; to understand domestic and international financial systems and the institutions within them; and to build financial relationships that foster marketing financial products.

An examination of financial services industry principles and practices seeks to provide individuals working in brokerage houses, investment or commercial banks, insurance companies, or real estate with a greater understanding of financial systems as well as how to manage risks, assets, and liabilities in meeting corporate goals.

Note: Courses from this certificate may not be applied toward the Master of Science in Leadership.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
FIN 6101	Accounting Fundamentals for Financial Institutions	4
FIN 6161	Investment Analysis	4
FIN 6102	Asset and Liability Management	4
FIN 6120	Building Financial Relationships	4

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Forensic Accounting, Graduate Certificate

News surrounding corporate corruption has had a significant impact on businesses, particularly the accounting industry. In response, the government has enacted sweeping accounting and business laws such as the Sarbanes-Oxley 2002 legislation. Additionally, many professional organizations, including the American Institute of Certified Public Accountants (AICPA) and the Association of Certified Fraud Examiners (ACFE), have made the prevention, detection, and prosecution of fraud and accounting abuse a priority.

This **four-course graduate certificate in forensic accounting** is designed to help students apply techniques in identifying, collecting, and examining evidence, including how to identify financial statement misrepresentation, transaction reconstruction, and tax evasion.

Note: Courses from this certificate may not be applied toward the Master of Science in Leadership.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Courses should be taken in the following sequence:

Code	Title	Hours
ACC 6210	Forensic Accounting Principles	4
ACC 6220	Dissecting Financial Statements	4
ACC 6230	Investigative Accounting and Fraud Examination	4
ACC 6240	Litigation Support	4

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Game Design, Graduate Certificate

Game design is one of the fastest-growing fields in entertainment, business, and education. From healthcare to political science, companies use games to educate their constituents and enhance employee skills.

The Graduate Certificate in Game Design offers a practice-oriented approach to the art and science of game making. The program emphasizes visual design and programming for video games and fosters conceptual understanding of the principles of game design for all varieties of games—from educational board games to iPhone games.

Courses in this program also serve as a concentration in the Master of Professional Studies in Digital Media.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
DGM 6122	Foundations of Digital Storytelling	4
DGM 6308	Intermediate Programming for Digital Media (Must take Test to qualify, if not take DMG 6108))	4
DGM 6400	Game Design Fundamentals	4
DGM 6403	Game Engine Fundamentals	4
DGM 6405	Game Development	4

Program Credit/GPA Requirements

20 total quarter hours required
Minimum 3.000 GPA required

Geographic Information Systems, Graduate Certificate

A geographic information system (GIS) combines layers of data to give needed information on specific locations. Such a system can map environmental sensitivities or geological features or can report on how best to speed emergency personnel to an accident or crime scene. Current fields using GIS include healthcare, public safety, environmental management, transportation and operations technology, real estate, and public utilities.

The Graduate Certificate in Geographic Information Systems program offers hands-on training, seeking to give students the necessary skills and understanding to apply GIS competently and effectively. As a result of the certificate curriculum, students should be well versed in GIS

theory, have practical hands-on exposure to GIS software and hardware, understand the representation of data in both mapped and tabular forms, and know how to plan and construct spatial databases.

The courses in this certificate program may be applied to the Master of Professional Studies in Geographic Information Technology.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
GIS 5101	Introduction to Geographic Information Systems	3
GIS 5102	Fundamentals of GIS Analysis	3
RMS 5105	Fundamentals of Remote Sensing	3
GIS 5201	Advanced Spatial Analysis	3

Electives

Code	Title	Hours
Complete two of the following:		6
GIS 6320	Use and Applications of Free and Open-Source GIS Desktop Software	
GIS 6340	GIS Customization	
GIS 6350	Planning a GIS Implementation	
GIS 6360	Spatial Databases	
GIS 6370	Internet-Based GIS	
GIS 6385	GIS/Cartography	
GIS 6390	Business Applications of Geographic Information Systems	
GIS 6391	Healthcare Applications of Geographic Information Systems	
GIS 6394	Crisis Mapping for Humanitarian Action	
GIS 6395	Geospatial Analysis of Crime	
GIS 6396	GIS for Defense, Homeland Security, and Emergency Response	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Global Student Mobility, Graduate Certificate

The Graduate Certificate in Global Student Mobility offers an in-depth look at the dynamic field of international higher education for those wishing to administer programs for domestic and/or international students, faculty, and institutions. Students will receive a grounding in cross-cultural theories while also exploring the widening range of program types, methods of delivery, and the importance of experiential and service-learning exchanges. Courses explore U.S.–government-sponsored programs, the role of nongovernmental organizations (NGOs) dedicated to international academic exchanges, and the fast-growing world of third-party providers. Taught by practitioners with real-world experience, students will have ample opportunity to review case studies illustrating both challenges and innovative practices in this essential and highly specialized area of higher education.

The continual expansion of globalization has changed the landscape of higher education worldwide and fueled the demand for professionals with

the skills and knowledge to enter this increasingly specialized field. The graduate certificate is designed to prepare students for employment in various sectors of the international education field including:

- Study abroad
- International student and scholar services
- International admissions and recruitment
- The development and administration of international study, work, and volunteer exchange
- Student ESL and language programs
- The complex range of U.S.–government-sponsored international exchange programs such as Fulbright, Humphrey, Muskie, YES, and scores of others
- NGOs supporting these exchanges such as IIE, Amideast, American Councils, and many others
- Creating and administering exchange programs for working professionals outside of higher education, targeting religious, philanthropic, and thematic programs

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
GST 6810	International Higher Education	4
GST 6820	Managing Study Abroad	4
GST 6830	Managing International Students	4

Elective

Code	Title	Hours
Complete one of the following:		4
GST 6101	Global Literacy, Culture, and Community	
INT 6900	International Field Study Experience (Requires co-registration in a 1 q.h. directed study. Students interested in taking INT 6900 should contact their Academic Advisor.)	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Global Studies and International Relations, Graduate Certificate

The Graduate Certificate in Global Studies and International Relations is designed to provide students with the skills and training necessary to analyze, research, and evaluate a topic of interest in a global location. Overall, the program curriculum focuses on the themes of transition and development in the global world. Core courses provide a base of knowledge about global issues and are combined with an elective that allows students to focus on a specific area of interest.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
GST 6100	Globalization and Global Politics and Economics	4
GST 6101	Global Literacy, Culture, and Community	4
GST 6320	Peace and Conflict	4

Elective

Code	Title	Hours
Complete one of the following:		
GST 6501	Regional Studies: East Asia	4
GST 6502	Regional Studies: Middle East	
GST 6503	Regional Studies: Sub-Saharan Africa	
GST 6504	Regional Studies: Europe	
GST 6505	Regional Studies: Southwest and Central Asia	
GST 6506	Regional Studies: Latin America	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Health Management, Graduate Certificate

Projections for the healthcare industry state that job growth will remain above average into the next decade. The needs of an aging population along with the increased human life cycle are just some of the factors contributing to this growth.

The Graduate Certificate in Health Management examines the financial, political, legal, and operational aspects of a healthcare facility and explores the evolution of healthcare delivery in the United States.

Health managers are found in different roles across healthcare organizations including:

- Strategic planning
- Operations
- Human resources
- Fund-raising
- Purchasing

Health managers are responsible for designing, administering, managing, and evaluating health policies, programs, and services. The courses in this certificate also serve as a concentration in the Master of Science in Leadership program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HMG 6110	Organization, Administration, Financing, and History of Healthcare	3
HMG 6120	Human Resource Management in Healthcare	3

NPM 6120	Financial Management for Nonprofit Organizations	3
HMG 6130	Healthcare Strategic Management	3

Elective Courses

Code	Title	Hours
Complete two of the following (minimum of 6 quarter hours):		
NPM 6110	Legal and Governance Issues in Nonprofit Organizations	6
NPM 6150	Human Resources Management in Nonprofit Organizations	
HMG 6140	Principles of Population-Based Management	
HMG 6160	Healthcare Information Systems Management	
HMG 6170	Health Law, Politics, and Policy	
HRM 6020	Talent Acquisition and Onboarding	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Higher Education Administration, Graduate Certificate

The effective administration of higher education institutions has never been as critical as at this time. Consider:

- The president of the United States of America and the secretary of education are calling for access to higher education for all
- European and Asian universities are ascending in quality, increasing as market forces
- The electronic delivery of education is escalating, creating new pedagogy and delivery models

To meet these challenges, as well as changing demographics, financial concerns, and legal and policy requirements, administrators and leaders in higher education need to be increasingly sophisticated and knowledgeable.

The Graduate Certificate in Higher Education Administration is designed to provide participants with an overall understanding of managerial concepts as well as the operational and strategic concepts that lead to effective administration. This program is best suited for individuals seeking mid- to senior-level administrative roles and individuals interested in transitioning from industry and other organizations into academia.

The certificate is comprised of 16 quarter hours, which may be applied toward the Master of Education in Higher Education Administration.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Core Courses

Code	Title	Hours
EDU 6201	The Landscape of Higher Education	4
EDU 6202	Faculty, Curriculum, and Academic Community	4
EDU 6203	Education Law, Policy, and Finance	4

Elective

Code	Title	Hours
Complete one of the following:		4
EDU 6520	Learning and the Brain: Translating Research into Practice	
EDU 6319	How People Learn	
EDU 6332	Open Learning	
EDU 6330	Digital Media Literacy	
EDU 6558	Issues in Education	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Human-Centered Informatics, Graduate Certificate

Human-centered informatics (HCI) focuses on the design, development, and evaluation of IT systems with a particular emphasis on the relations and interactions between people and IT systems. The emphasis of understanding users experience when they interact with technology in the information-rich environment and the design of interfaces between users and systems makes it different from the focus of software engineering programs or visual and artistic design programs.

The human-centered informatics graduate certificate offers students the opportunity to learn the theories of cognitive and social psychology as well as universal principles of design adopted in human-computer interaction. Students develop the technical skills to study user experience in various IT environments (home, business, social media, healthcare, etc.), focusing on user needs, information architecture, and design of user interfaces. Successful students that graduate with the HCI graduate certificate will be able to propose innovative or improve design solutions to real-world problems.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Courses		
ITC 6410	Fundamentals of Human Behaviors for Interactive Systems	3
DGM 6461	Interactive Information Design 1	4
DGM 6168	Usability and Human Interaction	4
DGM 6268	Usable Design for Mobile Digital Media	4
Elective		
Complete one of the following:		3-4
DGM 6463	Interactive Information Design 2	
ALY 6070	Communication and Visualization for Data Analytics	
ITC 6355	Web Application Design and Development	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Human Resources Management, Graduate Certificate

In today's multifaceted organizations, human resource professionals must respond to the growing challenges of regulatory compliance, complex benefit plans, and training and motivating employees.

The Graduate Certificate in Human Resources Management seeks to foster a deep understanding of organizational development and effective change management, workforce planning and strategic recruitment, and training and performance management.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HRM 6015	Introduction to Human Resources Management	3
HRM 6025	Workforce Analytics	3

Electives

Code	Title	Hours
Complete four of the following. Students waived out of HRM 6015, complete five of the following:		12
HRM 6005	Creating a High-Performance Organization: Strategic Organizational and HRM Choices	
HRM 6010	Compensation and Benefits	
HRM 6020	Talent Acquisition and Onboarding	
HRM 6030	The Employment Contract	
HRM 6042	Strategic Workforce Planning	
HRM 6047	Managing the Employee Life Cycle	
HRM 6050	Employee Engagement	
HRM 6060	Organizational Design	
HRM 6070	Global Human Resources Management	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Information Security Management, Graduate Certificate

Information security is a management issue with global business implications. To succeed in today's network economy requires more than simply a focus on information technology (IT) issues. Succeeding also requires a focus on security strategy and management. IT security governance is an overarching consideration in all risk-assessment and management-related endeavors and is important for information security since many issues have legal, regulatory, policy, and ethical considerations. The associated risks of business today must be clearly understood and managed.

The Graduate Certificate in Information Security Management is designed to provide a conceptual and practical overview of information security management. It begins with an overview of key information security management issues and principles. It presents security governance challenges including the policy, law, regulatory, and ethical accountability frameworks that information security risk managers must work within.

The program includes review courses that prepare students for the CISSP and CISA exams.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
ITC 6300	Foundations of Information Security	3
ITC 6305	IT Infrastructure (Systems, Networks, Telecom)	3
ITC 6310	Information Security Governance	3
ITC 6315	Information Security Risk Management	3
ITC 6320	Information Security Technology	3

Electives

Code	Title	Hours
Complete one of the following:		3-4
ITC 6325	CISA Preparation	
ITC 6330	CISSP Preparation	
ITC 6080	Network Security Concepts	

Program Credit/GPA Requirements

18–19 total quarter hours required
Minimum 3.000 GPA required

Interactive Design, Graduate Certificate

Digital media plays an increasingly significant role in the global culture and economy. The Graduate Certificate in Interactive Design offers an overview of courses in the creative process of storytelling and communicating through visuals and sound. Students have an opportunity to gain expertise in time-based design and interface and experience design through a practice-oriented problem-solving approach.

The courses in this program also serve as a concentration in the Master of Professional Studies in Digital Media.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
Required Courses		
DGM 6501	Web Creation Boot Camp	2
DGM 6521	Web Creation for Content Management Systems	2
DGM 6168 or TCC 6120	Usability and Human Interaction Usability and User Experience	4
DGM 6461	Interactive Information Design 1	4
DGM 6268	Usable Design for Mobile Digital Media	4

Electives

Complete one of the following:		4
DGM 6217	Typography for Interactivity	
TCC 6490	Usability Testing for Technical Communicators	

Program Credit/GPA Requirements

20 total quarter hours required
Minimum 3.000 GPA required

Interdisciplinary Professional Studies, Graduate Certificate

The contemporary workplace challenges professionals to develop and sustain the ever-changing skill sets and multidisciplinary workplace competencies required for success as innovators, leaders, and change agents. Organizations are similarly challenged in fostering employee professional development to meet the fluctuating demands of a highly technological and global economy. Today's professionals desire state-of-the-art approaches for continuing their education, including shorter, flexible, modularized, and just-in-time academic opportunities. To meet the growing demand for 21st-century learning, custom tailored to individual and organizational needs, Northeastern University's College of Professional Studies created the Interdisciplinary Graduate Certificate in Professional Studies—or iCert for short.

iCert represents a radically different approach to professional and academic learning. This first-of-its-kind certificate is uniquely designed to provide flexible multidisciplinary course options aligned with individual or organizational needs by incorporating three powerful learning components:

1. Intentional planning and reflection: Students identify and reflect on professional strengths, needs, aptitudes, and career interests in their iCert foundations course, resulting in a personalized professional learning plan (PLP).
2. Individualized program design: Students choose courses from multiple program areas, based on their PLP, customized to meet their academic goals.
3. Innovative experiential learning: Students choose from credit or noncredit real-world learning opportunities through Northeastern's online Experiential Network and their final iCert capstone course, connecting classroom learning to their current or future professional aspirations.

iCert graduates are encouraged to:

- Identify, reflect on, and articulate professional goals in order to envision a future self
- Develop a career focus that integrates and builds or enhances knowledge, skills, and attitudes around the following multidisciplinary workplace competencies:
 - Communications
 - Creative problem solving
 - Cultural responsiveness
 - Leadership
 - Lifelong learning
 - Management
 - Systems thinking
 - Technological proficiency
- Translate classroom learning into practice through authentic workplace experiences
- Build a professional practice as individuals, members of organizations, and socially responsible members of the global community
- Continue graduate studies in the following 10 master's degrees:
 - Corporate and organizational communication
 - Education

- Homeland security
- Human services
- Leadership
- Learning analytics
- Nonprofit management
- Project management
- Sports leadership
- Technical communication

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6184	Interdisciplinary Foundations	2
EDU 6980	Interdisciplinary Capstone	2

Choose a minimum of 12 quarter hours from the following:

CORPORATE AND ORGANIZATIONAL COMMUNICATION

Code	Title	Hours
CMN 6080	Intercultural Communication	3
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6015	Introduction to the Digital Era: The Power of Social Media	3
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	3
CMN 6060	Negotiation, Mediation, and Facilitation	3
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	3

EDUCATION

Code	Title	Hours
EDU 6319	How People Learn	4
EDU 6323	Technology as a Medium for Learning	4
EDU 6051	Culture, Equity, Power, and Influence	4
EDU 6333	Social Media and Beyond	4
EDU 6450	The Globalization of Education	4

LEARNING ANALYTICS

Code	Title	Hours
EDU 6340	Learning Analytics Concepts and Theories	4
EDU 6341	Introduction to Data Mining in Education	4
EDU 6343	Predictive Modeling for Learning Analytics	4
EDU 6182	Educational Statistics	4

HOMELAND SECURITY

Code	Title	Hours
HLS 6000	Introduction to Homeland Security	3

HUMAN SERVICES

Code	Title	Hours
HSV 6100	Theory and Practice of Human Services	3
HSV 6110	Human Services Management and Development	3
HSV 6120	Social Inequality, Social Change, and Community Building	3

LEADERSHIP

Code	Title	Hours
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3

NONPROFIT MANAGEMENT

Code	Title	Hours
NPM 6110	Legal and Governance Issues in Nonprofit Organizations	3
NPM 6120	Financial Management for Nonprofit Organizations	3
NPM 6150	Human Resources Management in Nonprofit Organizations	3

PROJECT MANAGEMENT

Code	Title	Hours
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6205	Leading and Managing Technical Projects	3
PJM 6210	Communication Skills for Project Managers	3
PJM 6215	Leading Remote Project Teams	3

SPORTS LEADERSHIP

Code	Title	Hours
LDR 6400	Sports Management	3

TECHNICAL COMMUNICATION

Code	Title	Hours
TCC 6100	Introduction to Technical and Professional Writing	4
TCC 6450	Managing Technical Publications	4
TCC 6430	Writing for the Computer Industry	4

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

International Biopharmaceutical Regulatory Affairs, Graduate Certificate

To work in today's global biopharmaceutical industry, there is a strong need to understand international regulations that impact the development, marketing, and manufacturing of pharmaceutical and biotechnology products.

The Graduate Certificate in Biopharmaceutical International Regulatory Affairs curriculum focuses on factors that facilitate the safety, performance, and efficacy of biomedical goods. Program training covers the assessment of international regulations and interpretation of their

likely impact on a company's global commercialization strategies. Through participation in the program, students will have an opportunity to gain an understanding of international regulatory requirements necessary to implement such strategies.

Course work covers biotechnology and pharmaceutical product approval processes, regulatory analysis, and liability laws as they exist across different regulatory systems. The graduate certificate will provide core regulatory knowledge to students entering into the field from bench research, clinical studies, quality control/assurance, pharmacy, bioengineering, business, and legal analysis. The curriculum covers regulatory environments in Europe, Latin America, Australia, Japan, and other emerging economies. Courses from this certificate may be applied toward the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RGA 6221	European Union Compliance Process and Regulatory Affairs	4
RGA 6241	Working in Multicultural Environments: Challenges and Opportunities	2
Complete two of the following:		8
RGA 6204	Legal Issues in International Food, Drug, and Medical Device Regulation	
RGA 6207	Global Impact of Electronic Common Technical Document (eCTD) Submissions	
RGA 6210	Strategic Planning and Project Management for Regulatory Affairs	
RGA 6212	Introduction to Safety Sciences	
RGA 6223	Introduction to Canadian, Asian, and Latin American Regulatory Affairs	
RGA 6224	Regulation of Biomedical Product Commercialization by Health Canada	
RGA 6229	Biomedical Product Regulatory Affairs in Emerging Markets: Russia and Kazakhstan	
RGA 6240		
RGA 6244	Therapeutic Product Development in Canada	
RGA 6245	Regulation of Generic Pharmaceutical and Biosimilar Products	
RGA 6249	Chinese Food and Drug Administration Regulation of Biomedical Product Commercialization	
RGA 6255	Global Convergence of Regulatory Science and Reimbursement/Market Access	

Program Credit/GPA Requirements

17 total quarter hours required
Minimum 3.000 GPA required

Leadership, Graduate Certificate

Today's cross-functional teams and organizations require a leadership style that capitalizes on the collective expertise and capabilities of the group. The development and mastery of collaborative leadership skills are not typically part of one's focused discipline preparation; hence, leadership requires deliberate development by those who assume leadership roles.

The Graduate Certificate in Leadership starts with the premise that everyone is capable of leadership. The program studies every aspect of leadership dynamics from the leader as an individual to working in teams and from the organization itself to the development of strategic leadership techniques. Course work exposes participants to a series of alternative perspectives of leadership, including collaborative models. Using the course's action-learning methods, participants build a personal model of leadership that they can put to immediate use in their workplace.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LDR 6100	Developing Your Leadership Capability	3
LDR 6110	Leading Teams	3
LDR 6120	Developing Organizational Leadership	3
LDR 6140	Strategy Development and Implementation	3

Leadership Electives

Code	Title	Hours
Complete two of the following:		6
LDR 6135	Ethical Leadership	
HRM 6005	Creating a High-Performance Organization: Strategic Organizational and HRM Choices	
LDR 6150	Innovation and Organizational Transformation	
CMN 6010	Strategic Communication Management	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Leading And Managing Technical Projects, Graduate Certificate

Whether you're an established project manager, or you're working in a technical field and aspire to be one, Northeastern's Graduate Certificate in Leading and Managing Technical Projects seeks to give you the foundational skills and practical knowledge you need to be successful.

Through courses you take online, our technical project management curriculum will give you the opportunity to:

- Develop the leadership and management skills to lead technical projects
- Learn how to communicate technical content to a nontechnical audience

- Gain practice leading remote teams, including global teams
- Plan and schedule projects using the most current and relevant methodologies
- Develop a personal leadership approach to motivate and inspire others

And should you choose, you can apply the credits you earn toward your certificate directly to our master's in project management (p. 339), master's in leadership (p. 335), master's in corporate and organizational communication (p. 328), or master's in Informatics (p. 325).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PJM 6000	Project Management Practices	3
PJM 6205	Leading and Managing Technical Projects	3
PJM 6210	Communication Skills for Project Managers	3
PJM 6215	Leading Remote Project Teams	3
PJM 6220	Planning and Scheduling Technical Projects	3
PJM 6825	Agile Lean Product Development	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Leading Communication Strategy and Talent Development, Graduate Certificate

The Graduate Certificate in Leading Communication and Talent Development responds to the growing demand for communicators who can assume a strategic advisory and leadership role. This certificate is intended to prepare communicators with the knowledge and competencies to:

- Participate in the development of their organization's strategic objectives through effective communication processes and activities
- Structure an effective communication function with a highly motivated team of communication professionals and appropriate allocation of resources
- Identify, mentor, and promote talented communication professionals
- Serve as a strategic advisor to the organization's senior management team

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
CMN 6200	Strategic Communications Advisor: Roles and Responsibilities	3
CMN 6201	Managing Communication Resources	3
CMN 6202	Management Symposium	3

Electives

Code	Title	Hours
Complete three of the following:		9
HRM 6020	Talent Acquisition and Onboarding	
LDR 6120	Developing Organizational Leadership	
PJM 6000	Project Management Practices	
PJM 6215	Leading Remote Project Teams	
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Learning Analytics, Graduate Certificate

Educators today are "swimming" in data about curricula, student assessment, social media, registrations, and demographics stored in data warehouses and "the cloud." This data makes it possible to collect, manage, and maintain massive amounts of educational information. The need to analyze and make data-based decisions in education has led to the emergence of a new field called learning analytics.

Through a set of focused courses, our curriculum will give you the opportunity to:

- Articulate and integrate diverse perspectives in the field of learning analytics, including learning analytics assumptions, theories, epistemologies, and debates
- Align learning analytics processes to address the needs of educational institutions and answer questions posed by educational leaders
- Select, prepare, implement, interpret, and evaluate learning analytic models appropriately

And should you choose, you can apply the credits you earn toward your certificate directly to our Master of Education concentration in learning analytics

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6340	Learning Analytics Concepts and Theories	4
EDU 6341	Introduction to Data Mining in Education	4
EDU 6182	Educational Statistics	4
EDU 6343	Predictive Modeling for Learning Analytics	4

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Medical Devices Regulatory Affairs, Graduate Certificate

The national and regional medical device industries have continued to experience significant market growth, despite the fluctuations in the overall global economy. There are more than 7,000 medical device companies in the United States alone, and nearly 1,000 of these are based in Massachusetts. In total, the medical device sector in Massachusetts employs 36,000 workers, has a payroll of over \$1.8 billion, and annual product shipments of \$7.3 billion.

The Graduate Certificate in Medical Devices Regulatory Affairs provides students with an opportunity to gain a detailed knowledge of the regulations influencing the commercialization of new and existing medical devices. The intensely practical curriculum spans the entire life cycle of product development and introduces students to the salient features governing both pre- and postapproval stages. The program content also examines the relationship between regulatory agencies and the medical device industry. Students have the opportunity to take specialized courses on regulatory systems outside the United States.

The certificate will help advance the careers of students coming from such fields as bioengineering, quality control/assurance, intellectual property, business, and marketing. The choice of several courses makes this certificate ideal for students already working in the regulatory world as well as those just entering into the profession.

Courses from this certificate may be applied toward the Master of Science in Regulatory Affairs for Drugs, Biologics, and Medical Devices.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
Required Courses		
RGA 6001	Introduction to Food and Drug Administration Medical Device Regulation	2
RGA 6202	Medical Device Development: A Regulatory Overview	4
Electives		
Complete the appropriate number of electives to obtain minimum quarter hours required for the program:		10-12
BTC 6210	Human Experimentation: Methodological Issues Fundamentals	
BTC 6260	The Business of Medicine and Biotechnology	
RGA 6002	Regulatory Compliance Culture	
RGA 6112	Biomedical Intellectual Property Management Strategy: Patents and Trade Secrets	
RGA 6205	Emerging Trends and Issues in the Medical Device Industry	
RGA 6222	European Medical Device Regulations	
RGA 6225	Japanese Medical Device Regulations and Registration	
RGA 6226	Canadian and Australian Medical Device Regulations	
RGA 6227	Emerging Medical Device Markets	

RGA 6233	Application of Quality System Regulation in Medical Device Design and Manufacturing
RGA 6242	Preparing EU Medical Device Clinical Evaluations
RGA 6243	Medical Device Product Development in Canada
RGA 6370	Advanced Regulatory Writing: Medical Device Submissions
RGA 6420	Global IVD Regulations and Submissions
ITP 6305	

Program Credit/GPA Requirements

16 total quarter hours required

Minimum 3.000 GPA required

Nonprofit Management, Graduate Certificate

Nonprofits today simply require a higher level of management expertise. Nonprofit managers are required to manage people and programs more efficiently and effectively. The Graduate Certificate in Nonprofit Management focuses on developing skills in organizational management, financial management, fund-raising, grant and report writing, human resources management, and governance.

The program integrates theoretical approaches with practical application to prepare students for positions in either small or large nonprofit organizations. The program targets individuals who work in the nonprofit sector as executive directors, managers, program staff, board members, and volunteers. Students have an opportunity to participate in case studies, individual and group projects, and class discussions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
NPM 6110	Legal and Governance Issues in Nonprofit Organizations	3
NPM 6120	Financial Management for Nonprofit Organizations	3
NPM 6125	Promoting Nonprofit Organizations	3
NPM 6130	Fundraising and Development for Nonprofit Organizations	3
NPM 6140	Grant and Report Writing	3
NPM 6150	Human Resources Management in Nonprofit Organizations	3

Program Credit/GPA Requirements

18 total quarter hours required

Minimum 3.000 GPA required

Organizational Communication, Graduate Certificate

The study of organizational communication focuses on the dynamics of communication in complex organizations for the purpose of learning how individuals within such organizations can become effective communicators. Whether the context of such communication is

meetings or professional presentations, communicating during a crisis, or intercultural exchanges, the message is consistent: Effective communication is a crucial factor in determining organizational success.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
CMN 6010	Strategic Communication Management	3
CMN 6020	Ethical Issues in Organizational Communication	3
CMN 6910	Organizational Communication Assessment	3

Electives

Code	Title	Hours
Complete two of the following:		6
CMN 6061	Personal Branding	
CMN 6050	Crisis Communication	
CMN 6060	Negotiation, Mediation, and Facilitation	
Complete one of the following:		3
CMN 6080	Intercultural Communication	
CMN 6090	Organizational Culture, Climate, and Communication	
CMN 6100	Communication Networks and Managing Information	
CMN 6110	Group Dynamics and Interpersonal Conflict: Meeting Management	
CMN 6015	Introduction to the Digital Era: The Power of Social Media	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Port Security, Graduate Certificate

The Graduate Certificate in Port Security examines U.S. and international policy, laws, and regulations for maritime and aviation security in light of current security challenges, terrorism and transnational criminal threats, and the potential U.S. and global impact of maritime and aviation security failures. Emergency response and recovery mechanisms and implementation as well as organizations and associations critical to modern U.S. maritime and aviation port security infrastructure protection will be evaluated and exercised.

The certificate offers leaders an opportunity to evaluate maritime and aviation security risks, threats, and measures to mitigate within applicable U.S. and international policy, assess and implement response and planning mechanisms for maritime transportation system security and aviation and airport security requirements, and conduct real-world actionable planning and strategy development for maritime and aviation security response and crisis management, among other essential skills for senior leaders.

This certificate is ideal for homeland security professionals and industry leaders responsible for maritime and aviation port security, incident

management and response, and the planning and execution of maritime and aviation operations within today's security challenges.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
HLS 6100	Maritime Port Security 1	4
HLS 6110	Maritime Port Security 2	4
HLS 6120	Aviation Security 1	4
HLS 6130	Aviation Security 2	4
HLS 6140	Port Security Capstone	4

Program Credit/GPA Requirements

20 total quarter hours required
Minimum 3.000 GPA required

Professional Sports Administration, Graduate Certificate

The revenue of the global professional sports industry has grown to \$145 billion and also projects an increase in jobs by up to 13 percent by 2020 (PwC, 2015).

The Graduate Certificate in Professional Sports Administration is designed to give students an in-depth understanding of this professional segment of the sports industry. Through the program's curriculum, students will be given the opportunity to acquire professional leadership skills and knowledge in a variety of topical areas including sports management, marketing, sponsorship, event management, risk management, and finance.

Upon completion, all credits earned in the professional sports administration certificate can also be applied directly into the Master of Sports Leadership (p. 352) program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
LDR 6323	Event Management	3
LDR 6400	Sports Management	3
LDR 6435	Fiscal Practices in Sports	3
LDR 6440	Sports Marketing and Promotions	3
LDR 6445	Corporate Sponsorships	3
LDR 6460	Risk Management in Athletics	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Program and Portfolio Management, Graduate Certificate

The increasingly important role of program and portfolio managers is clear, as we see more companies orienting their work in a projectized fashion. Not only are companies seeking to projectize their workflow, but they are seeking to better align projects with the strategic direction of the

company and industry. Program and portfolio managers need to be able to evidence the strategic value that projects are accomplishing and can continue to accomplish in their organizational context.

The need for organizations to coordinate their related projects into programs and to seek to understand the value of their work through the lens of a portfolio is recognized throughout all industry sectors. This has been made clear through the creation of advanced industry certifications, such as the Program Management Professional (PgMP[®]) and the Portfolio Management Professional (PfMP[®]) credential by the Project Management Institute.

Northeastern University's Graduate Certificate in Program and Portfolio Management is designed to prepare individuals with the knowledge, skills, and tools needed to effectively manage project-based programs and portfolios.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PJM 6710	Introduction to Program and Portfolio Management	3
PJM 6715	Advanced Program Management	3
PJM 6720	Advanced Portfolio Management	3
PJM 6725	Program and Portfolio Leadership	3
PJM 6730	Program and Portfolio Evaluation	3
PJM 6735	Program and Portfolio Management Capstone	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Project Business Analysis, Graduate Certificate

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PJM 6000	Project Management Practices	3
PJM 6610	Foundations of Project Business Analysis	3
PJM 6620	Project Business Analysis: Needs Assessment	3
PJM 6630	Project Business Analysis: Requirements Planning and Analysis	3
PJM 6640	Leadership Strategies for the Business Analyst	3
ALY 6000	Introduction to Analytics	3

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Project Management, Graduate Certificate

Technical and managerial employees at all levels of organizations are being asked to manage small and large projects. Many of these professionals have not been specifically trained to effectively and efficiently manage projects. The task of managing projects has its own body of knowledge. This program seeks to provide the practical and theoretical knowledge for which the Project Management Institute tests, and it is expected that individuals who successfully complete this program will be capable of fulfilling the education requirements of the Project Management Professional (PMP) certification exam.

This certificate program in project management is designed with sufficient course flexibility to accommodate professionals with various levels of project management experience. Project management principles are applicable to both manufacturing and service industries, including professionals in fields such as software engineering, construction management, and financial services.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Note: Foundations of Project Management (PJM 5900) is required for students who do not have at least two years of professional experience working on projects. This course is intended only for those who are not familiar with professional project work. Students with two years or more of professional project experience should not take this course:

Code	Title	Hours
PJM 5900	Foundations of Project Management	4
PJM 6000	Project Management Practices	3
PJM 6005	Project Scope Management	3
PJM 6025	Project Scheduling and Cost Planning	3
PJM 6015	Project Risk Management	3

Project Management Electives

Code	Title	Hours
Complete two of the following. Note: Students who take PJM 5900 are required to take only one course in this section:		6
PJM 6125	Project Evaluation and Assessment	
PJM 6135	Project Quality Management	
PJM 6140	Managing Troubled Projects	
PJM 6210	Communication Skills for Project Managers	
PJM 6710	Introduction to Program and Portfolio Management	
PJM 6810	Principles of Agile Project Management	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Public and Media Relations, Graduate Certificate

There is growing demand for communication professionals with digital media skills and a strategic perspective on brand and reputation management. According to the Bureau of Labor Statistics, employment of public relations specialists and managers will grow by 12 percent and

13 percent, respectively. The Graduate Certificate in Public and Media Relations is designed to prepare communication professionals who focus on external stakeholders for the challenges of a rapidly changing industry. This program focuses on developing strategic communication plans, crafting compelling messages, and performing audience research, while preparing students with the latest skills in digital platforms, tools, and techniques.

The goal of this program is to equip graduates with the knowledge and skills to:

- Design and produce public and media relations campaigns using written materials, social media, audio, video, and web-based tools
- Identify and anticipate audience behavior and expectations using primary and secondary research methods
- Strategically design, implement, and evaluate campaigns that support organizational performance

The courses in this program also serve as a concentration in the Master of Science in Corporate and Organizational Communication (p. 328).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
PBR 6100	Introduction to Public Relations	3
PBR 6135	Public Relations Strategy and Planning	3
PBR 6710	Public Relations Research: Understanding External Audiences	3

Elective Courses

Code	Title	Hours
Complete three of the following:		9-10
PBR 6125	Community Relations and Corporate Social Responsibility	
PBR 6130	Public Relations Writing Seminar 1	
PBR 6140	Public Relations Writing Seminar 2	
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	
CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	
CMN 6050	Crisis Communication	
DGM 6290	Social Media and Brand Strategy Implementation	

Program Credit/GPA Requirements

18–19 total quarter hours required
Minimum 3.000 GPA required

Remote Sensing, Graduate Certificate

Remote sensing is the measurement of information by a recording device that is not in physical contact with the object being measured. In practice, remote sensing is the utilization at a distance (as from aircraft, space shuttle, spacecraft, satellite, or ship) of any device for gathering information about the environment. The term remote sensing is most often applied to terrestrial and weather observations but can be applied

to planetary environments and astronomy. Remote sensing is applicable to many other situations, including land-use change, pollution tracking, land-use and planning, transportation systems, and military observation.

The online Graduate Certificate in Remote Sensing aims to make education and training in remote sensing available to adult and professional students. The remote sensing certificate program seeks to produce students who are well versed in remote sensing theory, who have hands-on exposure to remote sensing software and hardware, and who have learned how to extract pertinent data from remotely sensed data sets. This six-course certificate program seeks to provide students with the necessary skills and understanding to apply remote sensing knowledge competently and effectively in a variety of areas.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Courses

Code	Title	Hours
RMS 5105	Fundamentals of Remote Sensing	3
RMS 6110	Digital Image Processing	3

Remote Sensing Electives

Code	Title	Hours
Complete four of the following:		12
RMS 6215	Unmanned Aerial Systems for Geospatial Analysts	
RMS 6230	Remote Sensing and Global Change	
RMS 6240	Introduction to Radar and LiDAR Remote Sensing	
RMS 6250	Spatial Analytics for Vegetation and Precision Agriculture	
RMS 6270	Remote Sensing for Disaster Management	
RMS 6280	Automated Feature Extraction for the Geospatial Professional	
RMS 6290	Spectroscopic Image Analysis	
RMS 6292	Photogrammetry and GPS	
GIS 6394	Crisis Mapping for Humanitarian Action	

Program Credit/GPA Requirements

18 total quarter hours required
Minimum 3.000 GPA required

Respiratory Specialty Practice, Graduate Certificate

The goal and planned outcome of the respiratory specialty practice certificate program is to meet the need for registered respiratory therapists (RRTs) to document their competency in one of four respiratory care specialist practice areas:

1. Adult critical care
2. Neonatal and pediatric intensive care
3. Asthma and COPD education/wellness coordination
4. Pulmonary function testing

The goal and expected outcome is to help students working in these areas to reach a competency level where they can become board-certified specialists in one or more of the four specialty areas.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
RPT 7400	Pulmonary Diseases and Disorders	4
RPT 7401	Cardiopulmonary Assessment and Diagnostics	4

Electives

Code	Title	Hours
Complete two of the following:		8
RPT 7402	Adult Critical Care	
RPT 7403	Neonatal and Pediatric Care	
RPT 7404	Pulmonary Wellness Education and Coordination	
RPT 7405	Development of Patient Management Plans	

Program Credit/GPA Requirements

16 total quarter hours required
Minimum 3.000 GPA required

Social Media and Online Communities, Graduate Certificate

Social media management and strategy development have become core skills required for communication professionals. According to WANTED Analytics, 1.6 million working professionals utilize social media skills in jobs at the manager and executive level. The Graduate Certificate in Social Media and Online Communities focuses on strategic framework and the role digital media has in supporting organizational performance. The program integrates theory and practice, including experimenting with various tools and platforms and reflecting on lessons learned from active management and experimentation.

Students completing the program will have the opportunity to obtain the knowledge and skills to:

- Take a strategic approach to the design and implementation of social media channels and online communities
- Learn how to define metrics for measuring success, develop training, and evaluate the performance of social media activities
- Manage organizational risks and learn best practices in the creation of social media policies and guidelines

Courses within the social media and online communities certificate program also serve as a concentration through the Master's in Corporate and Organizational Communication program (p. 328).

Program Requirements

Required Courses

Code	Title	Hours
Required Courses		
CMN 6015	Introduction to the Digital Era: The Power of Social Media ¹	3
CMN 6025	Digital Era Skills: Platforms, Tools, and Techniques	3
CMN 6035	Legal, Policy, and Ethical Issues in the Digital Era	3

CMN 6045	Leveraging Digital Technologies: Strategy, Assessment, and Governance	3
CMN 6065	Implementation and Management of Social Media Channels and Online Communities	3

Electives

Complete one to two of the following: ¹		3-8
DGM 6285	Interactive Marketing Fundamentals	
DGM 6290	Social Media and Brand Strategy Implementation	
TCC 6710	Content Strategy	
CMN 6040	Consumer Behaviors in the Online Environment	

Program Credit/GPA Requirements

19–21 total quarter hours required
Minimum 3.000 GPA required

¹ Students may qualify to waive CMN 6015 if they have social media experience. Please consult with your academic advisor.

Teaching English To Speakers Of Other Languages, Graduate Certificate

The Graduate Certificate in Teaching English to Speakers of Other Languages (TESOL) is designed to provide students with a solid foundation in the structure and use of English language. The certificate offers teaching strategies, firmly grounded in research, theory, and practice, to instruct ESL/EFL (English as a Second Language/ English as a Foreign Language) to adults in the United States or internationally. Students have an opportunity to develop learning e-portfolios as part of their course work.

Topics covered by the program include best practices in TESOL methodology through a combination of lecture, small group work, reflection, classroom observation, and a practicum that provides hands-on experience designing lessons, materials, and assessments. Whether students want to teach English abroad, work with immigrant adult populations in the United States, or teach English at the university level, this graduate certificate will provide them with an opportunity to gain a combination of theoretical and practical training to teach English to speakers of other languages in international contexts, community colleges, and within organizations devoted to adult English-language learners.

This certificate does not lead to Massachusetts licensure.

SPECIAL REQUIREMENTS:

- The TESOL certificate program may be completed in two quarters and is offered 100 percent online.
- Students have the option to complete the practicum component online or on-ground.
- The program has two start terms: fall quarter and spring quarter.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Required Courses

Code	Title	Hours
EDU 6300	Introduction to Language and Linguistics	4
EDU 6534	Bilingualism, Second Language, and Literacy Development	4
EDU 6558	Issues in Education	1-4
EDU 6302	Teaching, Learning, and Assessment: How English Is Learned and Used	4
EDU 6312	TESOL Practicum and Seminar	5

Program Credit/GPA Requirements

18 total quarter hours required

Minimum 3.000 GPA required

College of Science

Website (<http://www.northeastern.edu/cos/graduate>)

Kenneth W. Henderson, PhD, Dean

Brent Nelson, PhD, Associate Dean, Undergraduate Affairs

David E. Budil, PhD, Associate Dean, Research and Graduate Affairs

Frederick C. Davis, PhD, Associate Dean, Faculty Affairs, Diversity and Inclusion

TBD, Associate Dean, Administration and Finance

James Poulos, MA, Associate Dean, Development

Lauren Machunis, MS, Assistant Dean, Undergraduate Advising and Enrollment Management

Kellie Melchin, MS, Assistant Dean, Graduate Administration

115 Richards Hall
617.373.5085
617.373.8583 (fax)
cos@northeastern.edu

Graduate Admissions and Student Services Office
617.373.4275
gradcos@northeastern.edu

The College of Science seeks to offer advanced students outstanding academics and real-world research experience through cutting-edge research opportunities that are both discipline based and interdisciplinary. Our doctoral and master's degree programs in the physical sciences, life sciences, and mathematics seek to give students a deep understanding of emerging fields such as chemical biology, cognition and neuroscience, environmental and marine science, biochemistry, bioinformatics, biotechnology, nanoscience, and network science. Our programs are positioned at the forefront of discovery, invention, and innovation. We seek to prepare students and professionals to enter the scientific workforce serving the academy, government, or private sector.

Academic Policies and Procedures

- Grading Policies (p. 373)
- Course Registration (p. 373)
- Transfer Credit (p. 373)
- Awards (p. 373)
- Satisfactory Progress (p. 374)
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- The Doctor of Philosophy Degree (PhD) (p. 374)
- The Master's Degree Academic Requirements (p. 375)

Grading Policies

In the College of Science, not more than two courses or 6 semester hours of credit, whichever is greater, may be repeated to satisfy the requirements for the degree. Only such repeats will be counted in calculating the cumulative grade-point average.

No grade changes are permitted after the end of the final examination period one calendar year from the semester in which the student registered for the course. In calculating the overall cumulative average,

all graduate-level course work completed at the time of clearance for graduation will be counted unless the student is immediately continuing on for a PhD degree in his or her department.

Course Registration

Students are encouraged to obtain advisor approval of course selections each semester. This approval is required for all assistantship recipients, and some departments require it for all students. Students should check with individual departments for specific guidelines.

Transfer Credit

A student may petition to transfer up to 9 semester hours of his or her program using credits from another institution, provided that the credits transferred consist of a grade of B (3.000) or better in graduate-level courses, have been earned at a U.S.-accredited institution, and have not been used toward any other degree. *Note:* If approved by the College of Science, credits from Northeastern University's College of Professional Studies (CPS) transfer to the College of Science as external credits and count toward the 9-semester-hour maximum of transfer credit. As courses at other institutions may not parallel courses at Northeastern, the student's academic department will determine the number of semester hours the external course will be worth. This calculation may result in fewer semester hours than the course was assigned at the institution at which the student completed the course. In addition, courses accepted for transfer credit must have been completed within five years of the date the student is admitted to graduate study. Grades are not transferred. Some departments may accept fewer than 9 transfer credits.

Awards

Only those students who are registered in degree programs are eligible for awards. Award recipients will receive an official award letter from the College of Science via email. Pay attention to this letter as it is an official contract that should be read carefully. In addition, to maintain awards, students must be making satisfactory progress toward their degrees.

Receipt of financial support administered by the College of Science is contingent on satisfactory academic progress toward the degree and on meeting department-specific guidelines. The College of Science requires that all students receiving awards will generally have two semesters to reach a 3.000 grade-point average (GPA). Students whose cumulative GPA is below 3.000 will be reviewed by their departments and by the College of Science and may have their funding terminated on recommendation of their department or by decision of the College of Science in consultation with their department. Renewals of awards will depend on the student making satisfactory academic progress toward the degree, including a GPA of 3.000 or the department's minimum GPA, if it is higher than the College of Science minimum, and satisfactory performance of any duties required by the award.

Satisfactory Progress

Satisfactory progress means satisfying requirements in the College of Science, in this graduate catalog, and in the regulations specified by the departments.

The College of Science sets minimum standards for all students to fulfill. Departments and programs may have additional requirements that exceed those of the College of Science. Students in the College of Science must be making satisfactory progress, including working toward the graduation requirement of a grade-point average of 3.000 in their course work and the timely completion of course work and comprehensive/qualifying examinations. See also the university's policy on academic standing ("Minimum Cumulative Grade-Point Average (p. 29)").

Time Limitation

Refer to university policy regarding time limitations. If students wish to apply for an extension of the time limit, they must submit a petition to their department of study. The petition must include a detailed plan for completion of all remaining degree requirements. In the case of master's degree time limit extension requests for course work, the department must certify that the content of each of the courses has not changed since the time the student completed the course. If deemed appropriate, the department will recommend a time limit extension to graduate student services. The associate dean for research and graduate education has final approval of time limit extensions.

Changes in Requirements

The continuing development of the College of Science graduate programs requires regular revision of curricula. When no hardship is imposed on the student because of changes and the facilities of the school permit, the student is expected to meet the most recent requirements. However, if it can be demonstrated to the director of graduate admissions and student services that doing so does impose a substantial hardship, the requirements of the year in which the student matriculated will be applicable.

The Doctor of Philosophy Degree (PhD)

The Doctor of Philosophy degree is awarded to candidates who provide evidence of high scholastic attainment and research ability in their major field. Specific degree requirements are administered by a committee in charge of the degree program. It is the responsibility of the chair of this committee to certify to the College of Science the completion of each requirement for each candidate.

Residence Requirement

A Doctor of Philosophy degree student must spend the equivalent of at least one academic year in residence at the university as a full-time graduate student. The committee of each degree program specifies the method by which the residence requirement is satisfied.

Qualifying Exam

In programs where a qualifying exam is required, students must complete this requirement within the time limit set by the program of study.

Comprehensive Examination

Degree programs may require a comprehensive examination. Generally, students are expected to complete all of the required degree course work prior to taking the comprehensive examination. Students must complete this requirement within the time limit set by the program of study, usually within one term of completing the required course work.

Doctoral Degree Candidacy

PhD degree candidacy is established when students have completed all departmental and university requirements for candidacy. These requirements vary by department and include completing the minimum number of graduate semester hours required of doctoral students by the department (this may include an earned master's degree accepted by the department) and passing a qualifying examination and/or a comprehensive examination. Once students reach doctoral degree candidacy they will be certified, in writing, by the college. Registration in course work is not permitted once a student reaches candidacy.

Continuity of Registration

For each of the first two semesters that a doctoral candidate has established candidacy, the student must register for Dissertation. For each semester beyond the two Dissertation registrations, the student must register for Doctoral Dissertation Continuation until the dissertation is approved by the College of Science. During the terms when a student is registered for Doctoral Dissertation or Dissertation Continuation, course work is not permitted as the course requirements for the degree have already been met. If the academic program requires enrollment in seminars or courses in addition to Dissertation or Dissertation Continuation, the department's graduate director will make a recommendation to the College of Science for approval. Approval must happen prior to registration. Students must be registered for Dissertation or Dissertation Continuation during the semester in which they take the final oral examination (including the full summer semester if that is when defense occurs). Any student who does not attend Northeastern University for a period of one year may be required to apply for readmission. A student who does not enroll for a period of three semesters, or one year, will be required to apply for readmission. Readmission is done via Apply Yourself. A student who does not enroll for a period of two semesters, or less than one year, may petition his or her department for reactivation. If the department is supportive, the student will be required to submit a written request to the departmental graduate committee. If the graduate committee feels the student is worthy of reactivation, the student's written request must be submitted to Graduate Admissions and Student Services. Please note that college admissions deadlines apply to requests for readmission and reactivation.

Dissertation

Each doctoral student must complete a dissertation that embodies the results of extended research and makes an original contribution to the field. This work should give evidence of the candidate's ability to carry out investigation and interpret in a logical manner the results of the research. The method of approval of the dissertation is established by the committee in charge of the degree program. The chair of the dissertation committee must be a full-time member of the faculty of Northeastern University. In addition, the chair of the dissertation committee must hold a doctoral degree. Typically, only one external committee member is allowed.

Final Oral Examination

The final oral examination will be on the subject matter of the doctoral dissertation and on important developments in the field of the dissertation. Other fields may be included if recommended by the examining committee. This examination will be taken after completion

of all other degree requirements and must be held at least two weeks prior to the Commencement at which the PhD is awarded. The oral exam must take place on campus in the presence of the chair/advisor and other dissertation committee members. The dissertation defense must be publicly announced prior to the defense and the opportunity given for other students, staff, and faculty to attend.

Interdisciplinary Doctoral Programs

Some graduate students may wish to pursue doctoral programs that involve substantial work in two or more departments. To meet this need, an interdisciplinary program may be established that corresponds in scope and depth to doctoral standards but does not agree exactly with the individual departmental regulations. Consult this graduate catalog for policies and guidelines pertaining to this doctoral option.

The Master's Degree Academic Requirements

A candidate for the master's degree must complete a minimum of 30 semester hours of graduate-level course work and such other study as may be required by the department in which the student is registered.

To qualify for the degree, a minimum cumulative average of 3.000, equivalent to a grade of B, must be obtained. This average will be calculated each semester according to the university grading system and will exclude any transfer credits or repeated courses. A student who does not make satisfactory progress toward degree requirements, as specified by the individual department, may be terminated from the program.

Comprehensive Examination

A final written or oral comprehensive examination is required in some programs. This examination will be given by the department concerned at least two weeks before the Commencement at which the degree is expected to be conferred.

Thesis

A master's thesis is required in some programs and should demonstrate the individual's capacity to execute independent work based on original material. Registration for Thesis is required in most programs.

Theses must be approved by the departmental graduate committee and, in cases in which a grade is required, must receive a grade of B (3.000) or better to be accepted.

Continuity of Registration

Students are expected to maintain satisfactory progress toward their intended degrees. All students must be registered in the last semester of their program. A student who does not enroll for a period of three semesters, or one year, will be required to apply for readmission. Readmission is done via Apply Yourself. A student who does not enroll for a period of two semesters, or less than one year, may petition his or her department for reactivation. If the department is supportive, the student will be required to submit a written request to the departmental graduate committee. If the graduate committee feels the student is worthy of reactivation, the student's written request must be submitted to Graduate Admissions and Student Services. Please note that college admissions deadlines apply to requests for readmission and reactivation.

Biology

Website (<http://www.northeastern.edu/biology>)

Jonathan L. Tilly, PhD

University Distinguished Professor and Chair

134 Mugar Life Sciences Building
617.373.2260
617.373.3724 (fax)
gradbio@northeastern.edu

Director of Graduate Studies for Biology

Erin J. Cram, PhD, Associate Professor, e.cram@northeastern.edu

Director of Graduate Studies for Bioinformatics

Steven Vollmer, PhD, Associate Professor, s.vollmer@northeastern.edu

The PhD program in biology emphasizes close interaction between graduate students and faculty in developing the intellectual and experimental skills required for creative independent research. Rigorous courses in a core biology curriculum, as well as advanced courses in particular research interests, are complemented by intensive research culminating in completion of a dissertation under faculty supervision. Students have an opportunity to declare a concentration in either cell and molecular biology or molecular microbiology.

The Department of Biology oversees the bioinformatics Master of Science program. The interdisciplinary program provides cross-disciplinary training in biology, computer science, and informational technology preparing students for cutting-edge jobs in the biotechnology and pharmaceutical industries. The program consists of four parts: fundamental courses, core courses, an optional co-op, and electives.

Programs

Doctor of Philosophy (PhD)

- Biology (p. 375)
- Biology—Advanced Entry (p. 376)

Master of Science (MS)

- Bioinformatics (p. 376)

Graduate Certificate

- Bioinformatics (p. 378)

Biology, PhD

The biology PhD program seeks to provide a broad background knowledge base in conjunction with in-depth study of a specialized area of biology. Two optional concentrations are available: cell and molecular biology and molecular microbiology. The program emphasizes close interaction between graduate students and faculty members in developing the intellectual and experimental skills required for creative, independent research.

The PhD program entails course work from a core biology curriculum along with advanced courses in the student's area of research interest. This is complemented by intensive research and completion of a dissertation under faculty supervision. Faculty research includes biochemistry, microbiology, cell and molecular biology, genetics, neurobiology, regenerative biology, and the biology of reproduction.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination

Annual review
 Dissertation committee
 Dissertation proposal
 Colloquia (minimum of three)
 First-author publication
 Dissertation defense

Core Requirements

Code	Title	Hours
Research Ethics		
BIOL 7399	Research Problem Solving, Ethics, and Communication Skills	4

Colloquium

Complete the following (repeatable) course twice:		
BIOL 5100	Biology Colloquium	2

BIOLOGY PHD WITHOUT CONCENTRATION

Code	Title	Hours
Required Course Work		

Complete 8 semester hours from the following: 8

BIOL 6303	Neurobiology and Behavior	
BIOL 6399	Dynamics of Microbial Ecology	
BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	
BIOL 6405	Prokaryotic Cell and Molecular Biology	
BIOL 6407	Biochemistry for Molecular Biologists	

Electives

Complete 16 semester hours from the following: 16		
BIOL 5103 to BIOL 8674		

Concentrations

- Cell and Molecular Biology (p.)
- Molecular Microbiology (p. 376)

CELL AND MOLECULAR BIOLOGY CONCENTRATION

Code	Title	Hours
Required Course Work		

BIOL 6401	Research Methods and Critical Analysis in Molecular Cell Biology	4
BIOL 6407	Biochemistry for Molecular Biologists	4

Electives

In consultation with faculty advisor, complete 16 semester hours from the topic of cell and molecular biology: 16

BIOL 5103 to BIOL 8674		
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MOLECULAR MICROBIOLOGY CONCENTRATION

Code	Title	Hours
Required Course Work		

Complete 8 semester hours from the following: 8		
BIOL 6399	Dynamics of Microbial Ecology	
BIOL 6405	Prokaryotic Cell and Molecular Biology	
BIOL 6407	Biochemistry for Molecular Biologists	

Electives

In consultation with faculty advisor, complete 16 semester hours from the topic of molecular microbiology: 16

BIOL 5103 to BIOL 8674		
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Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
BIOL 9990	Dissertation	

Program Credit/GPA Requirements

30 total semester hours required

Minimum 3.000 GPA required

Biology, PhD—Advanced Entry

The biology PhD program seeks to provide a broad background knowledge base in conjunction with in-depth study of a specialized area of biology. The program emphasizes close interaction between graduate students and faculty members in developing the intellectual and experimental skills required for creative, independent research.

Students entering the PhD program with a related Master of Science degree typically have significantly reduced course loads. An individualized course of study is designed by the biology graduate curriculum committee in consultation with the student and the student's advisor. The student can then focus on intensive research and completion of a dissertation under faculty supervision. Faculty research includes biochemistry, microbiology, cell and molecular biology, genetics, neurobiology, regenerative biology, and the biology of reproduction. Financial support (teaching assistantships or research assistantships) is normally provided for PhD students who are making satisfactory progress toward completion of their degree.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
 Annual review
 Dissertation committee
 Dissertation proposal
 Colloquia (minimum of three)
 First-author publication
 Dissertation defense

Core Requirements

APPROVED COURSE WORK

Consult your faculty advisor for acceptable courses.

APPROVED ELECTIVES

Consult your faculty advisor for acceptable electives.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
BIOL 9990	Dissertation	

Program Credit/GPA Requirements

Variable total semester hours required

Minimum 3.000 GPA required

Bioinformatics, MS

The Master of Science (MS) in Bioinformatics seeks to provide students with core knowledge in bioinformatics programming, integrating

knowledge from the biological, computational, and mathematical disciplines. Upon completion, students are equipped to apply bioinformatics and computational methods to biological problems. Students in the MS program have the opportunity to gain professional work experience via an optional co-op.

The program consists of core course work in computational methods, programming, and statistics, enhanced by electives in molecular biology, biochemistry, molecular modeling, web development, database design and management, data mining, and other related topics.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Computational Methods		
BINF 6308	Bioinformatics Computational Methods 1	4
BINF 6309	Bioinformatics Computational Methods 2	4
Research and Seminar		
BIOL 6381	Ethics in Biological Research	2
BINF 7385	Bioinformatics Seminar	2
Statistics and Programming		
BINF 6200	Bioinformatics Programming	4
MATH 7340	Statistics for Bioinformatics	4

Electives

Code	Title	Hours
Complete 12 semester hours from the following. Electives outside this list may be chosen in consultation with faculty advisor.		
BIOE 5100	Medical Physiology	12
BIOE 5235	Biomedical Imaging	
BIOE 5420	Cellular Engineering	
BIOL 5100	Biology Colloquium	
BIOL 5499	Plant Biotechnology	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Microbial Biotechnology	
BIOL 5569	Advanced Microbiology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	
BIOL 5585	Evolution	
BIOL 5587	Comparative Neurobiology	
BIOL 5591	Advanced Genomics	
BIOL 5593	Cell and Molecular Biology of Aging	
BIOL 5597	Immunotherapies of Cancer and Infectious Disease	
BIOL 6299	Molecular Cell Biology for Biotechnology	
BIOL 6300	Biochemistry	
BIOL 6301	Molecular Cell Biology	
BIOL 6303	Neurobiology and Behavior	
BIOL 6399	Dynamics of Microbial Ecology	

BIOL 6407	Biochemistry for Molecular Biologists
BIOT 5120	Introduction to Biotechnology
BIOT 5145	Basic Biotechnology Lab Skills
BIOT 5219	The Biotechnology Enterprise
BIOT 5225	Managing and Leading a Biotechnology Company
BIOT 5226	Biotechnology Entrepreneurship
BIOT 5227	Economics and Marketing for Biotechnology Managers
BIOT 5560	Bioprocess Fundamentals
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production
BIOT 5635	Downstream Processes for Biopharmaceutical Production
BIOT 5640	Drug Product Processes for Biopharmaceuticals
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology
BIOT 5850	Higher-Order Structure Analytics
BIOT 7245	Biotechnology Applications Laboratory
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis
CHEM 5616	Protein Mass Spectrometry
CHEM 5617	Protein Mass Spectrometry Laboratory
CHEM 5620	Protein Chemistry
CHEM 5638	Molecular Modeling
CHEM 5660	Analytical Biochemistry
CHEM 7317	Analytical Biotechnology
CS 5010	Programming Design Paradigm
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5400	Principles of Programming Language
CS 5500	Managing Software Development
CS 5600	Computer Systems
CS 5610	Web Development
CS 5700	Fundamentals of Computer Networking
CS 5800	Algorithms
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
DA 5020	Collecting, Storing, and Retrieving Data
DA 5030	Introduction to Data Mining/Machine Learning
EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130
MATH 5131	Introduction to Mathematical Methods and Modeling
MATH 7203	Numerical Analysis 1
MATH 7205	Numerical Analysis 2
MATH 7233	Graph Theory
MATH 7241	Probability 1
MATH 7341	Probability 2
MATH 7342	Mathematical Statistics

MATH 7344	Regression, ANOVA, and Design
MATH 7345	Nonparametric Methods in Statistics
PHSC 6214	Experimental Design and Biostatistics
PHYS 5116	Complex Networks and Applications
PHYS 7331	Network Science Data
PHYS 7332	Network Science Data 2
PPUA 5301	Introduction to Computational Statistics
PPUA 5302	Information Design and Visual Analytics

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Bioinformatics, Graduate Certificate

The Graduate Certificate in Bioinformatics seeks to provide students with core knowledge in bioinformatics programming, integrating knowledge from the biological, computational, and mathematical disciplines. Students gain the data and genomic analysis skills needed to employ bioinformatics techniques to biological problems. The graduate certificate consists of four courses, three bioinformatics courses and one elective, totaling 15–16 semester hours.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
BINF 6200	Bioinformatics Programming	4
BINF 6308	Bioinformatics Computational Methods 1	4
BINF 6309	Bioinformatics Computational Methods 2	4

Elective

Complete one of the following. Electives outside this list may be chosen in consultation with faculty advisor.

Code	Title	Hours
BIOE 5100	Medical Physiology	3-4
BIOE 5235	Biomedical Imaging	
BIOE 5420	Cellular Engineering	
BIOL 5100	Biology Colloquium	
BIOL 5499	Plant Biotechnology	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Microbial Biotechnology	
BIOL 5569	Advanced Microbiology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	
BIOL 5585	Evolution	
BIOL 5587	Comparative Neurobiology	
BIOL 5591	Advanced Genomics	
BIOL 5593	Cell and Molecular Biology of Aging	

BIOL 5597	Immunotherapies of Cancer and Infectious Disease
BIOL 6299	Molecular Cell Biology for Biotechnology
BIOL 6300	Biochemistry
BIOL 6301	Molecular Cell Biology
BIOL 6303	Neurobiology and Behavior
BIOL 6399	Dynamics of Microbial Ecology
BIOL 6407	Biochemistry for Molecular Biologists
BIOT 5120	Introduction to Biotechnology
BIOT 5130	Team Skills in Biotechnology
BIOT 5145	Basic Biotechnology Lab Skills
BIOT 5219	The Biotechnology Enterprise
BIOT 5225	Managing and Leading a Biotechnology Company
BIOT 5226	Biotechnology Entrepreneurship
BIOT 5227	Economics and Marketing for Biotechnology Managers
BIOT 5560	Bioprocess Fundamentals
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production
BIOT 5635	Downstream Processes for Biopharmaceutical Production
BIOT 5640	Drug Product Processes for Biopharmaceuticals
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology
BIOT 5850	Higher-Order Structure Analytics
BIOT 7245	Biotechnology Applications Laboratory
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis
CHEM 5616	Protein Mass Spectrometry
CHEM 5617	Protein Mass Spectrometry Laboratory
CHEM 5620	Protein Chemistry
CHEM 5660	Analytical Biochemistry
CHEM 7317	Analytical Biotechnology
CS 5010	Programming Design Paradigm
CS 5100	Foundations of Artificial Intelligence
CS 5200	Database Management Systems
CS 5400	Principles of Programming Language
CS 5500	Managing Software Development
CS 5600	Computer Systems
CS 5610	Web Development
CS 5700	Fundamentals of Computer Networking
CS 5800	Algorithms
CS 6140	Machine Learning
CS 6200	Information Retrieval
CS 6220	Data Mining Techniques
DA 5020	Collecting, Storing, and Retrieving Data
DA 5030	Introduction to Data Mining/Machine Learning
MATH 5131	Introduction to Mathematical Methods and Modeling

MATH 7203	Numerical Analysis 1
MATH 7205	Numerical Analysis 2
MATH 7233	Graph Theory
MATH 7241	Probability 1
MATH 7341	Probability 2
MATH 7342	Mathematical Statistics
MATH 7344	Regression, ANOVA, and Design
MATH 7345	Nonparametric Methods in Statistics
PHSC 6214	Experimental Design and Biostatistics
PHYS 5116	Complex Networks and Applications
PHYS 7331	Network Science Data
PHYS 7332	Network Science Data 2
PPUA 5301	Introduction to Computational Statistics
PPUA 5302	Information Design and Visual Analytics

Note: International students are required to select a 4-credit elective to maintain a full-time status, 8SH.

Program Credit/GPA Requirements

15–16 total semester hours required

Minimum 3.000 GPA required

Chemistry and Chemical Biology

Website (<http://www.northeastern.edu/chemistry>)

Michael P. Pollastri, PhD

Professor and Chair

102 Hurtig Hall
617.373.2822

Penny Beuning, PhD

Associate Professor and Director of Graduate Studies for Chemistry and Chemical Biology, p.beuning@northeastern.edu

Jared Auclair, PhD

Director of Graduate Studies for Biotechnology,
j.auclair@northeastern.edu

Cynthia Bainton, Administrative Operations Manager for Biotechnology,
c.bainton@northeastern.edu, 617.373.2627

The PhD program in chemistry and chemical biology provides research and professional opportunities for students that are based on fundamental chemical principles with translational applications to the real world. The program is built on academic rigor and research impact, based on the creativity and strengths of an increasingly diverse faculty and student body. We have harnessed our extensive connections in industry to create and maintain a thriving industry entry PhD program and provide our regular PhD students with internship opportunities in industry, government laboratories, and other venues that may lead to nontraditional careers. Students in our program leave with flexible skills that can be applied in creative and meaningful ways in academics, industry, and beyond. We are aligned in our core values with the mission of Northeastern University to “educate students for a life of fulfillment and accomplishments and create and translate knowledge to meet global and societal needs.” This mission is at the core of the curriculum, research, mentoring strategies, and professional development opportunities offered to our students. It is implemented in a highly

multidisciplinary and transparent environment where students have a voice and take real ownership and responsibility for their professional success. Within this context, PhD students work with chemistry and chemical biology faculty in interdisciplinary areas that include biochemistry and chemical biology, synthetic chemistry, medicinal chemistry, polymer and materials chemistry, computational chemistry, and bioanalytical chemistry.

The Master of Science in Chemistry is a part-time program designed to allow practicing chemical professionals in the greater Boston area who have an earned bachelor’s degree in chemistry to pursue a master’s part-time in chemistry by completing a course work program during the evening weekday hours. The department offers a diverse range of courses that mirror the faculty’s research interests in biochemistry, chemical biology, synthetic chemistry, medicinal chemistry, polymer and materials chemistry, computational chemistry, and bioanalytical chemistry.

The Department of Chemistry and Chemical Biology oversees the biotechnology graduate programs. The Master of Science in Biotechnology, a professional science master’s degree program, is an innovative, nonthesis graduate degree. It combines advanced interdisciplinary training in biotechnology, biology, chemistry, and pharmaceutical sciences with the development of high-value business skills critical to success in today’s dynamic workplace. Students are offered the opportunity to gain hands-on experience during the program through Northeastern’s established co-op program.

The biotechnology program also offers several graduate certificates in the areas of biopharmaceutical analytical sciences, biotechnology, biotechnology enterprise, experimental biotechnology, molecular biotechnology, pharmaceutical technologies, and process science.

Programs

Doctor of Philosophy (PhD)

- Chemistry (p. 379)
- Chemistry—Advanced Entry (p. 380)

Master of Science (MS)

- Biotechnology (p. 286)
- Chemistry (p. 383)

Graduate Certificate

- Biopharmaceutical Analytical Sciences (p. 293)
- Biotechnology (p. 383)
- Biotechnology Enterprise (p. 383)
- Experimental Biotechnology (p. 384)
- Molecular Biotechnology (p. 384)
- Pharmaceutical Technologies (p. 384)
- Process Science (p. 384)
- Regulatory Science (p. 385)

Chemistry, PhD

The PhD program in chemistry is designed for students who have earned a bachelor’s or a master’s degree in chemistry or related areas and who wish to earn a doctorate in chemistry. Research spans a wide range of multidisciplinary fields, with strengths in clean energy, polymers, materials, medicinal chemistry, bioanalytical chemistry, and chemical biology. Our research programs draw from a strong foundation in analytical, organic, physical, and biological chemistry in a collaborative and diverse environment. Our student-focused approach to mentoring,

a strong graduate student association, and faculty deeply rooted both in academics and industry provide a flexible platform for student development toward a large diversity of career paths.

Students typically take courses their first year while supported on teaching assistantships and achieve PhD candidacy the first or second half of year two. The primary emphasis of the program is on the completion of an original research project, its articulation in a well-written thesis, and its subsequent defense before the thesis committee through an open seminar followed by oral examination by the committee members.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Three qualifying examinations
Annual review
Candidacy
Dissertation committee
Minimum of three seminars
Dissertation defense

Core Requirements

Code	Title	Hours
Required Core		
CHEM 5600	Research Skills and Ethics in Chemistry	3
CHEM 7730	Advanced Laboratory Methods	4
CHEM 7750	Advanced Problem Solving	3
CHEM 8504	Graduate Seminar (repeatable)	1
At least one seminar must be taken for a letter grade.		
CHEM 8984	Research	1-6
Chemistry		
Complete 18 semester hours from the following:		18
CHEM 5550, CHEM 5570, or within the range of CHEM 5610 to CHEM 7320		

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CHEM 9990	Dissertation	0

Program Credit/GPA Requirements

33 total semester hours required
Minimum 3.000 GPA required

Chemistry, PhD—Advanced Entry

Advanced entry into the PhD program requires a master's degree in chemistry or a related area. Graduate courses taken during acquisition of the Master of Science degree allow completion of the PhD program with fewer course credits. Other than the course requirements, which are specified separately, see the PhD program requirements for details.

Industry Entry PhD

This program is strictly for students who already have a master's degree in chemistry or related area and have full-time employment at a company. The company must commit to all financial responsibilities accrued in

obtaining the degree and allow time for the student to work on a PhD thesis in collaborative research with a company supervisor and one of our faculty members. Graduate courses in the Department of Chemistry and Chemical Biology are taught in the evenings to accommodate the fact that our students work in industry during the day.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Three qualifying examinations
Annual review
Candidacy
Dissertation committee
Minimum of three seminars
Dissertation defense

Core Requirements

Code	Title	Hours
CHEM 5600	Research Skills and Ethics in Chemistry	3
CHEM 7750	Advanced Problem Solving	3
CHEM 8504	Graduate Seminar	1

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
CHEM 9990	Dissertation	0

Program Credit/GPA Requirements

7 total semester hours required
Minimum 3.000 GPA required

Biotechnology, MS

Overview

Northeastern's Master of Science in Biotechnology is a professional master's program, an innovative, nonthesis graduate degree. It combines advanced interdisciplinary training in biotechnology, biology, chemistry, and pharmaceutical sciences with the development of high-value business skills critical to success in today's dynamic workplace. Graduates are prepared to innovate, collaborate, and lead as research, managerial, or technical professionals in a wide range of biotechnology specialties.

Molecular Biotechnology Concentration

The molecular biotechnology concentration provides students with didactic and practical knowledge in molecular biotechnology, protein expression, and structural biology. Students learn how to generate and optimize molecular forms used to express recombinant proteins to be used as biopharmaceuticals. Particular attention is paid to cutting-edge technologies such as RNAi and CRISPR/CAS9. In addition, the students learn how to purify biopharmaceuticals and analyze aggregation and how to prevent it.

Process Sciences Concentration

The process sciences concentration focuses on the production of drug substance of biopharmaceuticals from cell culture process to purification of the biologic molecules. The students learn the principles of development and implementation of biological manufacturing processes through the integration of concepts and fundamentals of engineering

and life sciences. The concentration addresses biochemical engineering, mammalian cell culture process development, and protein purification. The learning of the students is reinforced by both lecture courses and project-driven laboratory experience that provides hands-on learning of cell culture and protein separation.

Biopharmaceutical Analytical Sciences Concentration

The biopharmaceutical analytical sciences concentration focuses on structures and activities of biological molecules and their variants formed during the production of biopharmaceuticals. Students learn the diversity of molecular forms derived from the biological products through various biological and chemical mechanisms and the impact of these structural changes on the safety and efficacy of these biopharmaceuticals. The students learn the science and practice applied in the biotechnology industry to analyze and characterize these molecular forms. This is accomplished through both lecture courses of the analytical sciences and project-driven laboratory experience that utilizes analytical techniques such as mass spectrometry and molecular separations.

Pharmaceutical Technologies Concentration

The pharmaceutical technologies concentration focuses on the conversion of purified proteins to biopharmaceutical drug products that are compatible for clinical use. This concentration addresses the design of the product formulation and the development and implementation of the drug product manufacturing processes. Students learn the sciences of the interactions of the biologic molecules in the process conditions and the relevant process technology, such as aseptic operations and freeze-drying, needed for drug product manufacturing. This is accomplished through both lecture courses and project-driven laboratory experience that offers hands-on learning of formulation design and drug product process development.

Biotechnology Scientific Information Management Concentration

The scientific information management concentration focuses on the collection, analysis, and visualization of scientific data. This concentration addresses the issues surrounding *big data* that face industry today. Students have an opportunity to learn how to manage, store, visualize, and provide overall analysis of large scientific data sets. This is accomplished through both lecture courses and project-driven laboratory experience that provide hands-on learning of the impacts of data on the scientific process.

Biotechnology Regulatory Science Concentration

The regulatory science concentration focuses on the science behind good regulatory practice today. This concentration addresses the issues surrounding current and innovative science practices that influence regulatory decisions. Students have an opportunity to learn the science behind compliance. This is accomplished through both lecture courses and project-driven laboratory experience that provides hands-on learning of the science behind dossier analysis.

Biotechnology Enterprise Concentration

The biotechnology enterprise concentration integrates business and management skills with the science of biotechnology. Students learn the fundamental concepts of leadership, entrepreneurship and innovation, financial decision making, and marketing. They gain teamwork, management, and business development skills in the process and graduate prepared to become scientist-managers.

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Biotechnology with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Biotechnology in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The certificate program requires fulfillment of the 16-semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 42-semester-hour master's degree and certificate requires 26 hours of biotechnology course work.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Required Core		
BIOT 5120	Introduction to Biotechnology	3
BIOT 5219	The Biotechnology Enterprise	2
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production	3
BIOT 6214	Experimental Design and Biostatistics	2
BIOL 6299	Molecular Cell Biology for Biotechnology	3
CHEM 5620	Protein Chemistry	3
CHEM 7317	Analytical Biotechnology	3
Co-op		
BIOT 6500	Professional Development for Co-op	0
BIOT 6964	Co-op Work Experience	0

Concentrations

Complete one of the following seven concentrations:

- Molecular Biotechnology Concentration (p. 287)
- Process Sciences Concentration (p.)
- Biopharmaceutical Analytical Sciences Concentration (p. 287)
- Pharmaceutical Technologies Concentration (p.)
- Scientific Information Management Concentration (p.)
- Regulatory (p.) Science Concentration (p.)
- Biotechnology Enterprise Concentration (p. 288)

MOLECULAR BIOTECHNOLOGY CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology	3
BIOT 5850	Higher-Order Structure Analytics	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

PROCESS SCIENCES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5560	Bioprocess Fundamentals	3
BIOT 5635	Downstream Processes for Biopharmaceutical Production	3

BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

BIOPHARMACEUTICAL ANALYTICAL SCIENCES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 7245	Biotechnology Applications Laboratory	3
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	3
CHEM 5616	Protein Mass Spectrometry	3
Electives (p. 288)		5

PHARMACEUTICAL TECHNOLOGIES CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5640	Drug Product Processes for Biopharmaceuticals	3
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		5

SCIENTIFIC INFORMATION MANAGEMENT CONCENTRATION

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5400	Scientific Information Management for Biotechnology Managers	3
BIOT 7245	Biotechnology Applications Laboratory	3
DA 5020	Collecting, Storing, and Retrieving Data	4
or DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5301	Introduction to Computational Statistics	4

REGULATORY SCIENCE CONCENTRATION

Code	Title	Hours
BIOT 5330		3
BIOT 5340	Introduction to Biotherapeutic Approvals	3
BIOT 5500	Introduction to Regulatory Science	3
BIOT 7245	Biotechnology Applications Laboratory	3
Electives (p. 288)		3

BIOTECHNOLOGY ENTERPRISE CONCENTRATION

Code	Title	Hours
BIOT 5225	Managing and Leading a Biotechnology Company	3
BIOT 5226	Biotechnology Entrepreneurship	3
BIOT 5227	Economics and Marketing for Biotechnology Managers	3
Electives (p. 288)		6

Elective List

Code	Title	Hours
Choose electives from the list and/or one-credit BUSN graduate level courses. Electives not on this list may be chosen with faculty advisor approval.		
BINF 6308	Bioinformatics Computational Methods	1

BIOL 5307	Biological Electron Microscopy
BIOL 5499	Plant Biotechnology
BIOL 5543	Stem Cells and Regeneration
BIOL 5549	Microbial Biotechnology
BIOL 5569	Advanced Microbiology
BIOL 5573	Medical Microbiology
BIOL 5581	Biological Imaging
BIOL 5583	Immunology
BIOL 6381	Ethics in Biological Research
BIOL 6399	Dynamics of Microbial Ecology
BIOT 5220	The Role of Patents in the Biotechnology Industry, Past and Future
BIOT 5225	Managing and Leading a Biotechnology Company
BIOT 5226	Biotechnology Entrepreneurship
BIOT 5227	Economics and Marketing for Biotechnology Managers
BIOT 5560	Bioprocess Fundamentals
BIOT 5635	Downstream Processes for Biopharmaceutical Production
BIOT 5640	Drug Product Processes for Biopharmaceuticals
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis
CHEM 5616	Protein Mass Spectrometry
CHEM 5617	Protein Mass Spectrometry Laboratory
CHEM 5621	Principles of Chemical Biology for Chemists
CHEM 5625	Chemistry and Design of Protein Pharmaceuticals
CHEM 5638	Molecular Modeling
CHEM 7247	Advances in Nanomaterials
CHME 7340	Chemical Engineering Kinetics
ENTR 6200	Enterprise Growth and Innovation
ENTR 6210	Managing Operations in Early Stage Ventures
ENTR 6211	Entrepreneurship: Services and Retail Business Creation
ENTR 6212	Business Planning for New Ventures
HINF 5105	The American Healthcare System
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management
MGMT 6210	Law for Managers and Entrepreneurs
MGSC 6200	Information Analysis
NNMD 5270	Introduction to Nanomedicine
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
PHSC 6218	Biomedical Chemical Analysis
PHSC 6224	Behavioral Pharmacology and Drug Discovery
PHSC 6226	Imaging in Medicine and Drug Discovery
PHSC 6290	Biophysical Methods in Drug Discovery
PHSC 7010	Pharmaceutical Sciences Laboratory

TECE 6230	Entrepreneurial Marketing and Selling
TECE 6250	Lean Design and Development

Program Credit/GPA Requirements

34 total semester hours required
Minimum 3.000 GPA required

Chemistry, MS

Part-time Master's

The Department of Chemistry and Chemical Biology offers a part-time, course-based master's degree. Classes are offered in the evenings to accommodate students who have full-time jobs. A research thesis is not a requirement for the degree.

Master's

The department does not accept applications for the thesis-based master's degree from students who are not already at Northeastern.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 30 semester hours from the following courses:		30
CHEM 5550–CHEM 7750		

THESIS OPTION

Code	Title	Hours
Course Work		
Complete 15 semester hours from the following:		15
CHEM 5550, CHEM 5570, or within the range of CHEM 5610 to CHEM 7320		

Graduate Seminar (letter grade required)

CHEM 5904	Seminar	1
or CHEM 8504	Graduate Seminar	

Skills and Ethics

CHEM 5600	Research Skills and Ethics in Chemistry	3
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Laboratory

CHEM 7730	Advanced Laboratory Methods	4
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Research

CHEM 5984	Research	4
or CHEM 8984	Research	

Thesis

CHEM 7990	Thesis	1-4
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Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Biopharmaceutical Analytical Sciences, Graduate Certificate

The Graduate Certificate in Biopharmaceutical Analytical Sciences has been designed in response to a need in the biotechnology industry for individuals with an advanced knowledge of the principles and practices

of state-of-the-art analyses of protein with focus on the characterization of innovator and biosimilars. Individuals, particularly those who are working in the various sectors of biotechnology including basic research of biological systems, discovery, development, and manufacturing of biopharmaceuticals, have an opportunity to improve their competency and learn new practical skills that enable them to increase productivity and further contribute to their professions. In addition, the certificate was designed for both individuals with and without experience in biopharmaceuticals and their analysis.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
CHEM 5616	Protein Mass Spectrometry	3
CHEM 5617	Protein Mass Spectrometry Laboratory	3
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	3
CHEM 5660	Analytical Biochemistry	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Biotechnology, Graduate Certificate

The Graduate Certificate in Biotechnology has been designed in response to a need in the biotechnology industry for individuals without a biotechnology background to obtain a strong foundation in basic biotechnology concepts and skills. Individuals, particularly those who are working in fields other than biotechnology, will acquire competency and learn new practical skills enabling them to increase productivity and allow for transitions into more biotechnology-related fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5120	Introduction to Biotechnology	3
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production	3
BIOL 6299	Molecular Cell Biology for Biotechnology	3
CHEM 5620	Protein Chemistry	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Biotechnology Enterprise, Graduate Certificate

The graduate certificate in biotechnology enterprise has been designed in response to a need in the biotechnology industry for individuals with a

biotechnology background to obtain a strong foundation in the business aspects of biotechnology. Individuals, particularly those who are working in the field of biotechnology, will improve their business competency enabling them to better manage a team or move into a more business-orientated roll.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5225	Managing and Leading a Biotechnology Company	3
BIOT 5226	Biotechnology Entrepreneurship	3
BIOT 5227	Economics and Marketing for Biotechnology Managers	3
CHEM 7317	Analytical Biotechnology	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Experimental Biotechnology, Graduate Certificate

The graduate certificate in experimental biotechnology has been designed in response to a need in the biotechnology industry for individuals without a biotechnology background to obtain a strong foundation in lab-based, hands-on, biotechnology skills. Individuals, particularly those who are working in fields other than biotechnology, will acquire competency and learn new practical lab skills enabling them to increase productivity and transition into more biotechnology-related fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5145	Basic Biotechnology Lab Skills	1
BIOT 5219	The Biotechnology Enterprise	2
BIOL 5549	Microbial Biotechnology	4
BIOT 6214	Experimental Design and Biostatistics	2
BIOT 7245	Biotechnology Applications Laboratory	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Molecular Biotechnology, Graduate Certificate

The graduate certificate in molecular biotechnology has been designed in response to a need in the biotechnology industry for individuals with an advanced knowledge of the principles and practices of state-of-the-art molecular biology techniques and advanced protein structure analysis. Individuals, particularly those who are working in the various sectors of

biotechnology including basic research of biological systems, discovery, development and manufacturing of biopharmaceuticals, will improve their competency and learn new practical skills enabling them to increase productivity and further contribute to their professions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	3
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology	3
BIOT 5850	Higher-Order Structure Analytics	3
CHEM 7317	Analytical Biotechnology	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Pharmaceutical Technologies, Graduate Certificate

The Graduate Certificate in Pharmaceutical Technology has been designed in response to a need in the biotechnology industry for individuals with an advanced knowledge of the principles and practices of the stages of drug development, biopharmaceutical development. Individuals, particularly those who are working in the various sectors of biotechnology including basic research of biological systems, discovery, development, and manufacturing of biopharmaceuticals, will improve their competency and learn new practical skills enabling them to increase productivity and further contribute to their professions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5640	Drug Product Processes for Biopharmaceuticals	3
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	3
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis	3
CHEM 7317	Analytical Biotechnology	3

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Process Science, Graduate Certificate

The graduate certificate in process sciences has been designed in response to a need in the biotechnology industry for individuals with an advanced knowledge of the principles and practices of process

development of biopharmaceuticals. Individuals, particularly those who are working in the various sectors of biotechnology including basic research of biological systems, discovery, development and manufacturing of biopharmaceuticals, will improve their competency and learn new practical skills enabling them to increase productivity and further contribute to their professions.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5560	Bioprocess Fundamentals	3
BIOT 5635	Downstream Processes for Biopharmaceutical Production	3
BIOT 5640	Drug Product Processes for Biopharmaceuticals	3
CHEM 7317	Analytical Biotechnology	3

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Regulatory Science, Graduate Certificate

This certificate was designed in response to a need in the biotechnology industry for individuals, in particular regulators, to obtain a strong foundation in the science behind good regulatory practice today, specifically in relation to biopharmaceuticals.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A grade of C– or higher is required in all courses.

Code	Title	Hours
BIOT 5330		3
BIOT 5500	Introduction to Regulatory Science	3
CHEM 5620	Protein Chemistry	3

Elective

Code	Title	Hours
Complete 3 semester hours from the following:		3

BIOT		
BINF 6308	Bioinformatics Computational Methods 1	
BIOL 5307	Biological Electron Microscopy	
BIOL 5499	Plant Biotechnology	
BIOL 5543	Stem Cells and Regeneration	
BIOL 5549	Microbial Biotechnology	
BIOL 5569	Advanced Microbiology	
BIOL 5573	Medical Microbiology	
BIOL 5581	Biological Imaging	
BIOL 5583	Immunology	

BIOL 6381	Ethics in Biological Research
BIOL 6399	Dynamics of Microbial Ecology
BIOT 5040	Fundamentals of Biochemistry for Biotechnology
BIOT 5050	Organic Chemistry for Biotechnology
BIOT 5120	Introduction to Biotechnology
BIOT 5130	Team Skills in Biotechnology
BIOT 5145	Basic Biotechnology Lab Skills
BIOT 5219	The Biotechnology Enterprise
BIOT 5220	The Role of Patents in the Biotechnology Industry, Past and Future
BIOT 5225	Managing and Leading a Biotechnology Company
BIOT 5226	Biotechnology Entrepreneurship
BIOT 5227	Economics and Marketing for Biotechnology Managers
BIOT 5340	Introduction to Biotherapeutic Approvals
BIOT 5360	Drug Stability
BIOT 5400	Scientific Information Management for Biotechnology Managers
BIOT 5500	Introduction to Regulatory Science
BIOT 5560	Bioprocess Fundamentals
BIOT 5631	Cell Culture Processes for Biopharmaceutical Production
BIOT 5635	Downstream Processes for Biopharmaceutical Production
BIOT 5640	Drug Product Processes for Biopharmaceuticals
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations
BIOT 5810	Cutting-Edge Applications in Molecular Biotechnology
BIOT 5820	Cellular Therapies
BIOT 5821	Introduction to Biopharmaceutical Technologies
BIOT 5850	Higher-Order Structure Analytics
BIOT 5976	Directed Study
BIOT 6214	Experimental Design and Biostatistics
BIOT 6400	Pre-co-op Experience
BIOT 6500	Professional Development for Co-op
BIOT 6962	Elective
BIOT 6964	Co-op Work Experience
BIOT 7245	Biotechnology Applications Laboratory
CHEM 5550	Introduction to Glycobiology and Glycoprotein Analysis
CHEM 5616	Protein Mass Spectrometry
CHEM 5617	Protein Mass Spectrometry Laboratory
CHEM 5621	Principles of Chemical Biology for Chemists
CHEM 5625	Chemistry and Design of Protein Pharmaceuticals
CHEM 5638	Molecular Modeling
CHEM 7247	Advances in Nanomaterials
CHME 7340	Chemical Engineering Kinetics
ENTR 6200	Enterprise Growth and Innovation

ENTR 6210	Managing Operations in Early Stage Ventures
ENTR 6211	Entrepreneurship: Services and Retail Business Creation
ENTR 6212	Business Planning for New Ventures
HINF 5105	The American Healthcare System
HINF 6201	Organizational Behavior, Work Flow Design, and Change Management
MGMT 6210	Law for Managers and Entrepreneurs
MGSC 6200	Information Analysis
NNMD 5270	Introduction to Nanomedicine
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market
PHSC 6218	Biomedical Chemical Analysis
PHSC 6224	Behavioral Pharmacology and Drug Discovery
PHSC 6226	Imaging in Medicine and Drug Discovery
PHSC 6290	Biophysical Methods in Drug Discovery
PHSC 7010	Pharmaceutical Sciences Laboratory
TECE 6230	Entrepreneurial Marketing and Selling
TECE 6250	Lean Design and Development

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Marine and Environmental Sciences

Website (<http://www.northeastern.edu/mes>)

Geoffrey C. Trussell, PhD

Professor and Chair

Marine Science Center
781.581.7370
781.581.6076 (fax)
gradmes@northeastern.edu

Jonathan Grabowski, PhD

Associate Professor and Director of Graduate Studies and Co-Director of MS in Environmental Science and Policy
j.grabowski@northeastern.edu

Jennie Stephens, PhD

Dean's Professor of Sustainability Science and Policy, College of Social Sciences and Humanities, and Co-Director of MS in Environmental Science and Policy
j.stephens@northeastern.edu

David Dawson, Academic Coordinator, 617.373.2059,
d.dawson@northeastern.edu

The PhD program in marine and environmental sciences is designed to train high-caliber and independent scientists whose research addresses fundamental and applied ecological and evolutionary questions at local, regional, national, and global scales.

This training will include both general and specialized course work in ecology and evolution, geoscience, sustainability, and marine sciences, with curricular programs providing specialized options tailored to each student's research interests. Students benefit from top-notch research

facilities at the Marine Science Center in Nahant and on the main campus in Boston. Graduates of the program are prepared for careers in academia, government agencies, and the private sector.

The Master of Science in Marine Biology, also known as the Three Seas Program, gives students an opportunity to learn in three world-renowned research facilities in New England, the Caribbean, and the Pacific Northwest. In addition to rigorous course work, the program offers the opportunity for students to formulate research questions, design and conduct critical experiments, and interpret and present results. The 15-month program culminates with an internship in the field and independent research project.

The Master of Science in Environmental Science and Policy is a joint program between the College of Science and the College of Social Sciences and Humanities' School of Public Policy and Urban Affairs. The interdisciplinary program aims to prepare the next generation of environmental professionals for dynamic opportunities focused on the science and policy of sustainability and resilience.

Programs

Doctor of Philosophy (PhD)

- Marine and Environmental Sciences (p. 386)
- Marine and Environmental Sciences—Advanced Entry (p. 388)

Master of Science (MS)

- Environmental Science and Policy (p. 389)
- Marine Biology—Three Seas Program (p. 391)

Marine and Environmental Sciences, PhD

The PhD in Marine and Environmental Sciences (MES) program provides students with advanced course work and training in the concentration areas of Marine Sciences, Geosciences, Sustainability Sciences, and Ecology and Evolutionary Biology. For students entering with a bachelor's degree, MES program completion requires 30 semester hours of graduate-level course work, of which 20 semester hours must carry a letter grade. All entering students must take a statistics course. This requirement may be waived for students who have taken a graduate level statistics course pending approval by the department's graduate committee. The remaining 10 semester hours must consist of two semesters of concentration seminars (one in the student's concentration and another of their choice), doctoral research, and approved graduate courses. Planned course work must be approved by the student's dissertation committee.

Students must pass three examinations during the course of their graduate studies:

1. An oral examination by the student's dissertation committee consisting of an oral presentation.
2. A proposal defense presented to the student's dissertation committee that explains the research areas that the student proposes to work in.
3. A defense of the student's written dissertation consisting of a public seminar, public question-and-answer period, and private defense of their work to their dissertation committee. Dissertation committees consist of at least four Northeastern faculty and one external faculty member.

A cumulative GPA of 3.000 is required for graduation. All PhD students are required to have at least one first-authored publication submitted to or accepted in a peer-reviewed journal prior to their defense. The PhD

will be awarded following submission of a dissertation, approved by the candidate's dissertation committee, to the College of Science.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review
Dissertation committee
Qualifying examination
Dissertation proposal
Candidacy
First-author publication
Dissertation defense

Core Requirements

Code	Title	Hours
Readings		
Complete the following (repeatable) course twice:		2
EEMB 8982	Readings	
Research		
Complete the following (repeatable) course twice:		8
EEMB 8984	Research	

Concentration

Complete one of the following concentrations:

- Ecology and Evolutionary Biology (p. 387)
- Sustainability Sciences (p. 387)
- Geosciences (p. 388)
- Marine Sciences (p. 388)

ECOLOGY AND EVOLUTIONARY BIOLOGY

Code	Title	Hours
Seminars		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	2
Complete one of the following:		2
EEMB Seminar in N(TBA)		
EEMB 7103	Seminar in Sustainability Sciences	
EEMB 7104	Seminar in Geosciences	
Statistics		
Complete one of the following:		4
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500	
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	
Alternative statistics course as approved by graduate committee		
Concentration Specific Electives		
Complete 12 semester hours from the following:		12
ENVR 5210	Environmental Planning	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
ENVR 5260	Geographical Information Systems	
ENVR 5400	Marine Science Policy and Ethics	

EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130	
EEMB 5504	Biology of Corals	
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	
EEMB 5512	Tropical Terrestrial Ecology	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5520	Coral Reef Ecology	
EEMB 5528	Marine Conservation Biology	
EEMB 5532	Physiological and Molecular Marine Ecology	
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534	
EEMB 5536	Ocean and Coastal Sustainability	
Substitutions may be made with approval of graduate committee.		

SUSTAINABILITY SCIENCES

Code	Title	Hours
Seminars		
EEMB 7103	Seminar in Sustainability Sciences	2
Complete one of the following:		2
EEMB Seminar in N(TBA)		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7104	Seminar in Geosciences	
Statistics		
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500	4
Alternative statistics course as approved by graduate committee		
Concentration Specific Electives		
Complete 12 semester hours from the following:		12
ENVR 5115	Advanced Topics in Environmental Geology	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
ENVR 5400	Marine Science Policy and Ethics	
EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130	
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5528	Marine Conservation Biology	
EEMB 5536	Ocean and Coastal Sustainability	
INSH 6406	Analyzing Complex Digitized Data	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

PPUA 7346	Resilient Cities	
POLS 7202	Quantitative Techniques	
POLS 7334	Social Networks	

Substitutions may be made with approval of graduate committee.

GEOSCIENCES

Code	Title	Hours
Seminars		
EEMB 7104	Seminar in Geosciences	2
Complete one of the following:		2
EEMB Seminar in M (TBA)		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7103	Seminar in Sustainability Sciences	

Statistics

Complete one of the following:		4
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500	
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	

Alternative statistics course as approved by graduate committee

Concentration Specific Electives

Complete 12 semester hours from the following:		12
ENVR 5115	Advanced Topics in Environmental Geology	
ENVR 5190	Soil Science	
ENVR 5210	Environmental Planning	
ENVR 5230 and ENVR 5231	Structural Geology and Lab for ENVR 5230	
ENVR 5240 and ENVR 5241	Sedimentary Basin Analysis and Lab for ENVR 5240	
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
ENVR 5270 and ENVR 5271	Glacial and Quaternary History and Lab for ENVR 5270	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5536	Ocean and Coastal Sustainability	

Substitutions may be made with approval of graduate committee.

MARINE SCIENCES

Code	Title	Hours
Seminars		
EEMB Seminar in Mar (TBA)		2
Complete one of the following:		2
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7103	Seminar in Sustainability Sciences	
EEMB 7104	Seminar in Geosciences	

Statistics

Complete one of the following:		4
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500	

EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	
Alternative statistics course as approved by graduate committee		

Concentration Specific Electives

Complete 12 semester hours from the following:		12
ENVR 5242 and ENVR 5243	Ancient Marine Life and Lab for ENVR 5242	
ENVR 5260	Geographical Information Systems	
ENVR 5270 and ENVR 5271	Glacial and Quaternary History and Lab for ENVR 5270	
ENVR 5400	Marine Science Policy and Ethics	
EEMB 5130 and EEMB 5131	Ecological Dynamics and Lab for EEMB 5130	
EEMB 5504	Biology of Corals	
EEMB 5506	Biology and Ecology of Fishes	
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	
EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	
EEMB 5518	Ocean and Coastal Processes	
EEMB 5520	Coral Reef Ecology	
EEMB 5528	Marine Conservation Biology	
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534	
EEMB 5536	Ocean and Coastal Sustainability	

Substitutions may be made with approval of graduate committee.

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
EEMB 9990	Dissertation	

Program Credit/GPA Requirements

30 total semester hours required
Minimum 3.000 GPA required

Marine and Environmental Sciences, PhD—Advanced Entry

The PhD in Marine and Environmental Sciences (MES) program provides students with advanced course work and training in the concentration areas of Marine Science, Geoscience, Sustainability, and Ecology and Evolution. Students admitted with a master's degree must take a statistics course and two semesters of seminar: one in the student's concentration and another of their choice. Transcripts detailing their previous course work will be submitted upon arrival to their dissertation committee and the marine and environmental sciences graduate committee to determine whether additional course work is required. The dissertation committee may require the student to pursue additional course work as needed to provide the necessary background for their program of study. Additional course work may also be required depending on the student's performance on written qualifying and oral examinations.

Students must pass three examinations during the course of their graduate studies:

1. An oral examination by the student's dissertation committee consisting of an oral presentation.
2. A proposal defense presented to the student's dissertation committee that explains the research areas that the student proposes to work in.
3. A defense of the student's written dissertation consisting of a public seminar, public question-and-answer period, and private defense of their work to their dissertation committee. Dissertation committees consist of at least four Northeastern faculty and one external faculty member.

A cumulative GPA of 3.000 is required for graduation. All PhD students are required to have at least one first-authored publication submitted to or accepted in a peer-reviewed journal prior to their defense. The PhD will be awarded following submission of a dissertation, approved by the candidate's dissertation committee, to the College of Science.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Annual review
- Dissertation committee
- Qualifying examination
- Dissertation proposal
- Candidacy
- First-author publication
- Dissertation defense

Core Requirements

Code	Title	Hours
Statistics		
Complete one of the following:		4
ENVR 6500 and ENVR 6501	Biostatistics and Lab for ENVR 6500	
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	
Alternative statistics course as approved by graduate committee		
Readings		
Complete the following (repeatable) course twice:		2
EEMB 8982	Readings	

Concentration

Complete one of the following concentrations:

- Ecology and Evolutionary Biology (p. 389)
- Sustainability Sciences (p. 389)
- Geosciences (p. 389)
- Marine Sciences (p. 389)

ECOLOGY AND EVOLUTIONARY BIOLOGY

Code	Title	Hours
Seminars		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	2
Complete one of the following:		2
EEMB 7103	Seminar in Sustainability Sciences	

EEMB Seminar in Marine Sciences

Code	Title	Hours
EEMB 7104	Seminar in Geosciences	
SUSTAINABILITY SCIENCES		
Seminars		
EEMB 7103	Seminar in Sustainability Sciences	2
Complete one of the following:		2
EEMB Seminar in M(TBA)		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7104	Seminar in Geosciences	

GEOSCIENCES

Code	Title	Hours
Seminars		
EEMB 7104	Seminar in Geosciences	2
Complete one of the following:		2
EEMB Seminar in M(TBA)		
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7103	Seminar in Sustainability Sciences	

MARINE SCIENCES

Code	Title	Hours
Seminars		
EEMB Seminar in Mar (TBA)		2
Complete one of the following:		2
EEMB 7102	Seminar in Ecology and Evolutionary Biology	
EEMB 7103	Seminar in Sustainability Sciences	
EEMB 7104	Seminar in Geosciences	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
EEMB 9990	Dissertation	

Program Credit/GPA Requirements

- 10 total semester hours required
- Minimum 3.000 GPA required

Environmental Science and Policy, MS

The Master of Science in Environmental Science and Policy program emphasizes a broadly interdisciplinary and synthetic approach that integrates knowledge in the environmental sciences (conservation biology, climate change, fisheries science, ecosystem function, biodiversity, restoration ecology) with the social sciences (policy, economics, sociology, political science, and development) and humanities (environmental history, philosophy, and ethics). The goal of the program is to equip professionals with substantive breadth in knowledge and skills at the intersection of environmental science and policy. The program focuses on training students to think critically about the underlying causes of environmental problems and understanding the reciprocal relationships between coupled human-natural ecosystems and the interconnections between social and technological innovations. The program explores practical approaches and potential solutions that

decision makers need to evaluate in policy debates related to promoting environmental sustainability.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Seminars		
PPUA 6101	Environmental Science and Policy Seminar 1	4
ENVR 6102	Environmental Science and Policy Seminar 2	4

Skills Courses

Complete 6-8 semester hours from the following. At least one course needs to be taken from the College of Science Skills Course List and one course from the College of Social Sciences and Humanities Skills Course List.

College of Science Skills Course List

EEMB 5130	Ecological Dynamics	6-8
EEMB 5522	Experimental Design Marine Ecology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
ENVR 5400	Marine Science Policy and Ethics	
ENVR 6500	Biostatistics	

College of Social Sciences and Humanities Skills Course List

LPSC 6313	Economic Analysis for Law, Policy, and Planning	6-8
LPSC 7215	Advanced Quantitative Techniques	
LPSC 7305	Research and Statistical Methods	
LPSC 7311	Strategizing Public Policy	
POLS 7201	Research Design	
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5301	Introduction to Computational Statistics	
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	
PPUA 6207	Research Toolkit for Urban and Regional Policy: Survey Techniques	
PPUA 6209	Research Toolkit for Urban and Regional Policy: Working with Datasets	
PPUA 6210	Research Toolkit for Urban and Regional Policy: Cost/Benefit Analysis	
PPUA 6212	Research Toolkit for Urban and Regional Policy: Project Management	
PPUA 6213	Research Toolkit for Urban and Regional Policy: Data Visualization	
PPUA 6216	Research Toolkit for Urban and Regional Policy: Grant Writing	
PPUA 6502	Economic Institutions and Analysis	
PPUA 6506	Techniques of Policy Analysis	

PPUA 6509	Techniques of Program Evaluation
PPUA 7237	Advanced Spatial Analysis of Urban Systems
SOCL 7211	Research Methods

Electives

Any skills course not taken to fulfill the skills courses requirement can be taken as an elective. Students must take three electives from the College of Science and three from the College of Social Science and Humanities. Students may petition to enroll in other relevant graduate courses offered by other schools at Northeastern University.

COLLEGE OF SCIENCE ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
EEMB 5518	Ocean and Coastal Processes	12
EEMB 5528	Marine Conservation Biology	
EEMB 5536	Ocean and Coastal Sustainability	
EEMB 5548	Sociobiology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

COLLEGE OF SOCIAL SCIENCES AND HUMANITIES ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
LPSC 7311	Strategizing Public Policy	12
LPSC 7312	Cities, Sustainability, and Climate Change	
PHTH 5214	Environmental Health	
PHTH 5230	Global Health	
PHTH 5440	Community-Based Participatory Research: Environmental Health	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5264	Energy Transitions and Climate Resilience: Technology, Policy, and Social Change	
PPUA 5266	Urban Theory and Science	
PPUA 5270	Food Systems and Public Policy	
PPUA 5275	Philanthropy and Civil Society	
PPUA 5302	Information Design and Visual Analytics	
PPUA 5390	Special Topics in Public Policy and Urban Affairs	
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	
PPUA 6204	Urban Development and Politics	
PPUA 6505	Public Budgeting and Financial Management	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6522	Administrative Ethics and Public Management	
PPUA 6551	Nonprofit Organizations and Social Change	
PPUA 6552	The Nonprofit Sector in Civil Society and Public Affairs	

PPUA 6553	Nonprofit Financial Resource Development
PPUA 6862	Internship with Research
PPUA 6966	Practicum
PPUA 7225	The Open Classroom: Public Debates on Public Policy
PPUA 7230	Housing Policy
PPUA 7234	Land Use and Urban Growth Policy
PPUA 7239	Problems in Metropolitan Policymaking
PPUA 7249	Urban Coastal Sustainability
PPUA 7231	Transportation Policy
PPUA 7336	Social Capital and Resilience
PPUA 7346	Resilient Cities
PPUA 7673	Capstone in Public Policy and Urban Affairs
SOCL 7211	Research Methods
SOCL 7230	Political Ecology of Global Capitalism
SOCL 7235	Urban Sociology
SOCL 7243	Sociology of Health and Illness
SOCL 7257	Contemporary Issues in Sociology
SOCL 7267	Environment, Health, and Society
SOCL 7287	Social Movements in Health

Program Credit/GPA Requirements

Note: Typically, students will complete 12–16 semester hours of seminar and skills courses and 18–24 semester hours of electives.

36 total semester hours required
Minimum 3.000 GPA required

Marine Biology, MS—Three Seas Program

The MS in Marine Biology—Three Seas Program provides students the opportunity to study marine biology in three distinct environments at three world-renowned research facilities in New England, the Caribbean, and the Pacific Northwest. An internship in the field and independent research project provide the capstone to the fifteen-month graduate program.

Much more than course work in a classroom, the MS in Marine Biology—Three Seas Program delivers inquiry-based curriculum in marine science during which our students formulate research questions, design and conduct critical experiments, and interpret and present results. You will have an opportunity not only learn science, you have an opportunity to learn how to do science and become a marine scientist.

This program is for students eager to broaden their knowledge of marine biology or who want to further refine their interests.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Students register for International Study—Three Seas Program (ABRS 5120) for the fall and spring terms of year 1.

Code	Title	Hours
Seminar		
EEMB 5303	Marine Biology Careers Seminar	1

Biology

EEMB 5504	Biology of Corals	3
EEMB 5506	Biology and Ecology of Fishes	3
EEMB 5508 and EEMB 5509	Marine Birds and Mammals and Lab for EEMB 5508	3
EEMB 5518	Ocean and Coastal Processes	2
EEMB 5534 and EEMB 5535	Marine Invertebrate Zoology and Botany and Lab for EEMB 5534	5

Sustainability

EEMB 5516 and EEMB 5517	Oceanography and Lab for EEMB 5516	5
EEMB 5528	Marine Conservation Biology	3
EEMB 5536	Ocean and Coastal Sustainability	3

Ecology

EEMB 5512	Tropical Terrestrial Ecology	1
EEMB 5520	Coral Reef Ecology	2
EEMB 5522 and EEMB 5523	Experimental Design Marine Ecology and Lab for EEMB 5522	5
EEMB 5532	Physiological and Molecular Marine Ecology	3

Research

EEMB 5589	Diving Research Methods	2
Take the following (repeatable) course twice:		2
EEMB 8674	Marine Biology Research Project	

Program Credit/GPA Requirements

43 total semester hours required
Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
EEMB 5303	1	EEMB 5504	3	EEMB 8674	1
EEMB 5516 and EEMB 5517	5	EEMB 5506	3		
EEMB 5522 and EEMB 5523	5	EEMB 5508 and EEMB 5509	3		
EEMB 5534 and EEMB 5535	5	EEMB 5512	1		
EEMB 5536	3	EEMB 5518	2		
EEMB 5589	2	EEMB 5520	2		
		EEMB 5528	3		
		EEMB 5532	3		
	21		20		1

Year 2

Fall	Hours
EEMB 8674	1
	1

Total Hours: 43

Mathematics

Website (<http://www.northeastern.edu/cos/mathematics>)

Alexandru Suciu, PhD

Professor and Chair

567 Lake Hall
617.373.2450
617.373.5658 (fax)

Egon Schulte, PhD

Professor and Director of Graduate Studies, e.schulte@northeastern.edu
(e.schulte@northeastern.edu)

Chantal Cardona, Administrative Assistant, c.cardona@northeastern.edu
(c.cardona@northeastern.edu)

Mathematics is of ever-increasing importance to our society and everyday life. It has long been the language of science and technology and provides a rich source of methods for analyzing and solving problems encountered in the physical world. Today, mathematics is essential in virtually all fields of human endeavor, including business, the arts, and the social sciences.

PhD students work with internationally recognized faculty in research programs in both pure and applied mathematics. The program is designed to provide students with a broad overview of current mathematics and a strong command of areas of specialization.

The Department of Mathematics also offers Master of Science degrees in mathematics, applied mathematics, and operations research. These programs prepare students for careers in business, industry, or government. Students pursuing degrees in applied math and operations research take part in Northeastern's signature co-op program.

In addition to the numerous seminars and colloquia at Northeastern, there are ample opportunities for students in the Boston area to learn about important recent advances in the field.

Programs

Doctor of Philosophy (PhD)

- Mathematics (p. 392)
- Mathematics—Advanced Entry (p. 394)

Master of Science (MS)

- Applied Mathematics (p. 396)
- Mathematics (p. 396)

Master of Science in Operations Research (MSOR)

- Operations Research (p. 397)

Mathematics, PhD

Course Requirements

Students entering with a bachelor's degree are required to take 64 semester hours of course work divided between foundational and advanced offerings. Students entering the program will be allowed to place out of some (possibly all) of the eight basic-level courses; the graduate coordinator together with the first-year graduate advisor will determine the allowable course substitutions and will advise the student which foundational courses to take. Students may satisfy requirements for Algebra 1 (MATH 5111) and Analysis 1: Functions of One Variable

(MATH 5101) by taking qualifying exams in algebra 1 and in analysis 1 at the start of the program. Students may satisfy foundational course requirements if they demonstrate proficiency by passing an assessment exam in the course at the beginning of the semester or by demonstrating that they have taken a similar course and have adequate knowledge of the course material (syllabus and transcript are required; a brief oral examination is also required in that case). Academic advising will happen just before the start of each term and during the add/drop period in order to plan a student's course registration for the term. A complete listing of foundational and advanced courses is available from the Department of Mathematics and the graduate dean's office. Students are not permitted to register for more than two "readings" courses and three "topics" courses for credit toward the degree without explicit permission from the graduate dean. A minimum grade-point average (GPA) of 3.000 is required for degree conferral.

Teaching Requirement

Some teaching experience is required while in the program. Students must attend university-led TA training at the start of the program; attend a one-semester TA training course conducted by faculty from the Department of Mathematics teaching committee; spend one semester shadowing faculty in the undergraduate classroom; and perform recitations and grading for the undergraduate course they are shadowing.

Qualifying Exams

Qualifying exam sessions are given once in spring and once in fall. Students will be required to pass four qualifying exams: algebra 1, analysis 1, and two other exams. The possible additional topics for qualifying exams are algebra 2, analysis 2, combinatorics, geometry, ordinary differential equations, partial differential equations, probability, statistics, topology, and algebraic geometry. A qualifying exam may be taken twice by any student. Additional attempts may be allowed at the discretion of the graduate committee with permission from the graduate dean in the College of Science. Two qualifying exams should be passed no later than the end of the second year and all four by the end of the third year.

Doctoral Candidacy

PhD candidacy is reached when all of the following conditions are met:

- Completion of eight advanced courses
- Identification of an unsolved research problem
- Successful passing of four qualifying exams
- Assignment of PhD supervisor and creation of a 1-page initial plan
- Completion of a 3-page plan of research
- Completion of a 10-page progress report and a one-hour defense of proposal, presented to supervisor and three faculty members of graduate committee

Dissertation Requirement

Each candidate must complete a dissertation that embodies the results of extended research and makes an original contribution to the field. This work should give evidence of the candidate's ability to carry out independent investigation and interpret, in a logical manner, the results of the research. There are two stages to this process:

- **Stage 1:** Students in the PhD program must have a dissertation supervisor within two years after joining the PhD program. The department views the failure of a student to find a supervisor within two years of joining the PhD program with concern and considers this sufficient cause to review the student's status in the PhD program. The process of obtaining a dissertation supervisor always involves two choices—the student chooses the supervisor, and the

supervisor chooses the student. For this reason, the department does not guarantee a dissertation supervisor for every student, but the department recognizes its responsibility to help the student find a satisfactory match. This aid is usually provided by the student's graduate advisor, who should be familiar with the student's progress in finding a dissertation supervisor. The dissertation supervisor guides the student's further education as well as directs the student's dissertation. The dissertation itself must represent an original solution of a problem in the chosen area of mathematics that makes a significant contribution to the mathematical knowledge in that area. Students must enroll in Dissertation or Dissertation Continuation while fulfilling the dissertation requirements.

- **Stage 2 (dissertation defense):** The final oral examination on the dissertation is held in accordance with university regulations and given by a dissertation committee of four faculty members (three from the university, including the supervisor, and one from outside Northeastern University). The dissertation supervisor should propose this dissertation committee to the graduate committee for its approval at least one month before the PhD dissertation defense.

Program Requirements Bachelor's Degree Entry

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Four qualifying examinations
- Annual review
- Dissertation committee
- Teaching requirement
- Doctoral candidacy
- Progress report and presentation
- Dissertation defense

Prerequisites

Code	Title	Hours
Algebra and Analysis		
MATH 5101	Analysis 1: Functions of One Variable	4
MATH 5111	Algebra 1	4

Tracks

Complete one of the following three tracks:

- Pure Track (p. 393)
- Discrete Track (p. 393)
- Probability and Statistics Track (p. 393)

PURE TRACK

Code	Title	Hours
Analysis		
MATH 5102	Analysis 2: Functions of Several Variables	4
Algebra		
MATH 5112	Algebra 2	4
Foundational Courses		
Complete up to 16 semester hours from the following:		16
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	

MATH 7233	Graph Theory	
MATH 7241	Probability 1	
MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 394)

DISCRETE TRACK

Code	Title	Hours
Algebra		
MATH 5112	Algebra 2	4
Probability		
MATH 7241	Probability 1	4
Foundational Courses		
Complete up to 16 semester hours from the following:		16
MATH 5102	Analysis 2: Functions of Several Variables	
MATH 5111	Algebra 1	
MATH 5112	Algebra 2	
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	
MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 394)

PROBABILITY AND STATISTICS TRACK

Code	Title	Hours
Analysis		
Complete 4 semester hours from the following:		4
MATH 5102	Analysis 2: Functions of Several Variables	
MATH 7203	Numerical Analysis 1	
Probability		
MATH 7241	Probability 1	4
or MATH 7342	Mathematical Statistics	
Foundational Courses		
Complete up to 16 semester hours from the following:		16
MATH 5102	Analysis 2: Functions of Several Variables	
MATH 5112	Algebra 2	
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	
MATH 7241	Probability 1	

MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 394)

Advanced Course Work List

Code	Title	Hours
MATH 7206	Inverse Problems: Radon Transform, X-Ray Transform, and Applications	
MATH 7234	Optimization and Complexity	
MATH 7301	Functional Analysis	
MATH 7303	Complex Manifolds	
MATH 7311	Commutative Algebra	
MATH 7312	Lie Theory	
MATH 7315	Algebraic Number Theory	
MATH 7316	Lie Algebras	
MATH 7317	Modern Representation Theory	
MATH 7320	Modern Algebraic Geometry	
MATH 7321	Topology 3	
MATH 7344	Regression, ANOVA, and Design	
MATH 7345	Nonparametric Methods in Statistics	
MATH 7346 to MATH 7392		
MATH 7976 to MATH 8986		
MATH 8460	Graduate Seminar in Geometry and Representation Theory	
MATH 9948	Modern Mathematical Research	
MATH 9984	Research	
MATH 7721	Readings in Topology	
MATH 7732	Readings in Combinatorial Geometry	
MATH 7733	Readings in Graph Theory	
MATH 7734	Readings in Algebra	
MATH 7735	Readings in Algebraic Geometry	
MATH 7741	Readings in Probability and Statistics	
MATH 7751	Readings: Analysis	
MATH 7754	Readings in Ordinary Differential Equations	
MATH 7771	Readings in Geometry	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
MATH 9990	Dissertation	

Program Credit/GPA Requirements

64 total semester hours required
Minimum 3.000 GPA required

Mathematics, PhD—Advanced Entry**Course Requirements**

Advanced students who enter the PhD program with a master's degree (or equivalent) will be allowed to place out of some (possibly all) of the eight basic-level courses; the graduate coordinator together with

the first-year graduate advisor will determine the allowable course substitutions and will advise the student which foundational courses to take. Students may satisfy requirements for Algebra 1 (Algebra 1 (MATH 5111) and Analysis 1: Functions of One Variable (MATH 5101)) by taking qualifying exams in algebra 1 and in analysis 1 at the start of the program. Students may satisfy foundational course requirements if they demonstrate proficiency by passing an assessment exam in the course at the beginning of the semester or by demonstrating that they have taken a similar course and have adequate knowledge of the course material (syllabus and transcript are required; a brief oral examination is also required in that case). Academic advising will happen just before the start of each term and during the add/drop period in order to plan a student's course registration for the term. A complete listing of foundational and advanced courses is available from the Department of Mathematics and the graduate dean's office. Students are not permitted to register for more than two "readings" courses and three "topics" courses for credit toward the degree without explicit permission from the graduate dean. A minimum grade-point average (GPA) of 3.000 is required for degree conferral.

Teaching Requirement

Some teaching experience is required while in the program. Students must attend university-led TA training at the start of the program; attend a one-semester TA training course conducted by faculty from the Department of Mathematics teaching committee; spend one semester shadowing faculty in the undergraduate classroom; and perform recitations and grading for the undergraduate course they are shadowing.

Qualifying Exams

Qualifying exam sessions are given once in spring and once in fall. Students will be required to pass four qualifying exams: algebra 1, analysis 1, and two other exams. The possible additional topics for qualifying exams are algebra 2, analysis 2, combinatorics, geometry, ordinary differential equations, partial differential equations, probability, statistics, topology, and algebraic geometry. A qualifying exam may be taken twice by any student. Additional attempts may be allowed at the discretion of the graduate committee with permission from the graduate dean in the College of Science. Two qualifying exams should be passed no later than the end of the second year and all four by the end of the third year.

Doctoral Candidacy

PhD candidacy is reached when all of the following conditions are met:

- Completion of eight advanced courses
- Identification of an unsolved research problem
- Successful passing of four qualifying exams
- Assignment of PhD supervisor and creation of a 1-page initial plan
- Completion of a 3-page plan of research
- Completion of a 10-page progress report and a one-hour defense of proposal, presented to supervisor and three faculty members of graduate committee

Dissertation Requirement

Each candidate must complete a dissertation that embodies the results of extended research and makes an original contribution to the field. This work should give evidence of the candidate's ability to carry out independent investigation and interpret, in a logical manner, the results of the research. There are two stages to this process:

- **Stage 1:** Students in the PhD program must have a dissertation supervisor within two years after joining the PhD program. The department views the failure of a student to find a supervisor within

two years of joining the PhD program with concern and considers this sufficient cause to review the student's status in the PhD program. The process of obtaining a dissertation supervisor always involves two choices—the student chooses the supervisor, and the supervisor chooses the student. For this reason, the department does not guarantee a dissertation supervisor for every student, but the department recognizes its responsibility to help the student find a satisfactory match. This aid is usually provided by the student's graduate advisor, who should be familiar with the student's progress in finding a dissertation supervisor. The dissertation supervisor guides the student's further education as well as directs the student's dissertation. The dissertation itself must represent an original solution of a problem in the chosen area of mathematics that makes a significant contribution to the mathematical knowledge in that area. Students must enroll in Dissertation or Dissertation Continuation while fulfilling the dissertation requirements.

- **Stage 2 (dissertation defense):** The final oral examination on the dissertation is held in accordance with university regulations and given by a dissertation committee of four faculty members (three from the university, including the supervisor, and one from outside Northeastern University). The dissertation supervisor should propose this dissertation committee to the graduate committee for its approval at least one month before the PhD dissertation defense.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Four qualifying examinations
- Annual review
- Dissertation committee
- Teaching requirement
- Doctoral candidacy
- Progress report and presentation
- Dissertation defense

Code	Title	Hours
Complete 0–16 semester hours of the following courses:		
MATH 5101	Analysis 1: Functions of One Variable	4
MATH 5102	Analysis 2: Functions of Several Variables	4
MATH 5111	Algebra 1	4
MATH 5112	Algebra 2	4

Tracks

Complete one of the following three tracks:

- Pure Track (p. 395)
- Discrete Track (p. 395)
- Probability and Statistics Track (p. 395)

PURE TRACK

Code	Title	Hours
Foundational Courses		
Complete 0–16 semester hours from the following: 0-16		
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	

MATH 7241	Probability 1
MATH 7341	Probability 2
MATH 7342	Mathematical Statistics
MATH 7343	Applied Statistics

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 395)

DISCRETE TRACK

Code	Title	Hours
Foundational Courses		
Complete 0–16 semester hours from the following: 0 - 16		
MATH 5102	Analysis 2: Functions of Several Variables	
MATH 5111	Algebra 1	
MATH 5112	Algebra 2	
MATH 7203	Numerical Analysis 1	
MATH 7202	Partial Differential Equations 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	
MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 395)

PROBABILITY AND STATISTICS TRACK

Code	Title	Hours
Foundational Courses		
Complete 0–16 semester hours from the following: 0 - 16		
MATH 5102	Analysis 2: Functions of Several Variables	
MATH 5112	Algebra 2	
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	
MATH 7241	Probability 1	
MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	

Advanced Course Work

Complete 32 semester hours from the advanced course work list. Only two readings and three topics courses are allowed. (p. 395)

Advanced Course Work List

Code	Title	Hours
MATH 7206	Inverse Problems: Radon Transform, X-Ray Transform, and Applications	
MATH 7234	Optimization and Complexity	

MATH 7301	Functional Analysis
MATH 7303	Complex Manifolds
MATH 7311	Commutative Algebra
MATH 7312	Lie Theory
MATH 7315	Algebraic Number Theory
MATH 7316	Lie Algebras
MATH 7317	Modern Representation Theory
MATH 7320	Modern Algebraic Geometry
MATH 7321	Topology 3
MATH 7344	Regression, ANOVA, and Design
MATH 7345	Nonparametric Methods in Statistics
MATH 7346 to MATH 7392	
MATH 7976 to MATH 8986	
MATH 8460	Graduate Seminar in Geometry and Representation Theory
MATH 9948	Modern Mathematical Research
MATH 9984	Research
MATH 7721	Readings in Topology
MATH 7732	Readings in Combinatorial Geometry
MATH 7733	Readings in Graph Theory
MATH 7734	Readings in Algebra
MATH 7735	Readings in Algebraic Geometry
MATH 7741	Readings in Probability and Statistics
MATH 7751	Readings: Analysis
MATH 7754	Readings in Ordinary Differential Equations
MATH 7771	Readings in Geometry

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
MATH 9990	Dissertation	

Program Credit/GPA Requirements

32–64 total semester hours required
Minimum 3.000 GPA required

Applied Mathematics, MS

Eight graduate courses (32 semester hours of credit) are required for the degree: three required courses and five elective courses. The required courses provide a basic training in mathematical methods, and the elective courses include a wide variety of advanced topics. In addition, the program allows up to two of the elective courses to be taken outside the Department of Mathematics. No course can be used to satisfy both a requirement and an elective.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Methods and Modeling		
MATH 5131	Introduction to Mathematical Methods and Modeling	4

Algebra and Analysis

Complete one of the following:		4
MATH 5101	Analysis 1: Functions of One Variable	
MATH 5111	Algebra 1	
MATH 7241	Probability 1	

Statistics

MATH 7342	Mathematical Statistics	4
or MATH 7343	Applied Statistics	

Tracks

Complete one of the following two tracks:

- Data Science Track (p.)
- Course Work Track (p.)

DATA SCIENCE TRACK

Code	Title	Hours
Data Science Courses		
Choose two from the following:		8
CS 6140	Machine Learning	
CS 6220	Data Mining Techniques	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
DS 5220	Supervised Machine Learning and Learning Theory	
DS 5230	Unsupervised Machine Learning and Data Mining	
EECE 5644	Introduction to Machine Learning and Pattern Recognition	
INFO 6210	Data Management and Database Design	

Students may take other courses not on the list above from the College of Computer and Information Science in consultation with their faculty advisor.

COURSE WORK TRACK

Code	Title	Hours
Course Work		
Complete 8 semester hours. These courses may be chosen from outside the Department of Mathematics with faculty approval.		8

Electives

Code	Title	Hours
Complete 12 semester hours in the following subject area:		12
MATH		

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Mathematics, MS

A total of 32 semester hours, this program offers students with a bachelor's degree in mathematics or a related field an opportunity to broaden their knowledge in the several fields of mathematics and its applications. The program is designed to prepare graduates for careers in business, industry, or government. Previous course work will be evaluated to determine proficiency in certain content areas and degree plan may

be tailored accordingly. In some cases, a student may be required to take an assessment exam to determine content and knowledge proficiency. No course can be used to satisfy both a requirement and an elective. To qualify for degree conferral, students must obtain a minimum cumulative average of 3.000, equivalent to a grade of B.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Algebra 1 and Analysis 1		
MATH 5101	Analysis 1: Functions of One Variable	4
or MATH 5102	Analysis 2: Functions of Several Variables	
MATH 5111	Algebra 1	4
or MATH 5112	Algebra 2	
Algebra 2 and Analysis 2		
MATH 5102	Analysis 2: Functions of Several Variables	4
Complete 4 semester hours from the following:		4
MATH 5112	Algebra 2	
Elective chosen from the list below		

Electives

Code	Title	Hours
Complete 16 semester hours from the following:		16
MATH 7202	Partial Differential Equations 1	
MATH 7203	Numerical Analysis 1	
MATH 7205	Numerical Analysis 2	
MATH 7221	Topology 2	
MATH 7233	Graph Theory	
MATH 7234	Optimization and Complexity	
MATH 7241	Probability 1	
MATH 7301	Functional Analysis	
MATH 7341	Probability 2	
MATH 7342	Mathematical Statistics	
MATH 7343	Applied Statistics	
MATH 7344	Regression, ANOVA, and Design	
MATH 7349	Stochastic Calculus and Introduction to No-Arbitrage Finance	

Program Credit/GPA Requirements

32 total semester hours required
 Minimum 3.000 GPA required

Operations Research, MSOR

This program seeks to train students in the basic techniques and theory of operations research and their applications to real-world problems. Graduates should have developed their analytical skills to attack complex, large-scale optimization problems of both a deterministic and stochastic nature. Eight 4-semester-hour graduate courses are required for this degree. Previous course work will be evaluated to determine proficiency in certain content areas and degree plan may be tailored accordingly. In some cases, a student may be required to take an assessment exam to determine content and knowledge proficiency. No course can be used to satisfy both a requirement and an elective. To

qualify for degree conferral, a minimum cumulative grade-point average of 3.000, equivalent to a grade of B, must be obtained. Some courses listed for this program are offered in the College of Engineering or the College of Computer and Information Systems.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Probability		
Complete 4 semester hours from the following:		4
MATH 7241	Probability 1	
MATH 7341	Probability 2	
OR 7230	Probabilistic Operation Research	
Statistics		
MATH 7342	Mathematical Statistics	4
or MATH 7343	Applied Statistics	
Operations Research		
OR 6205	Deterministic Operations Research	4
Optimization and Complexity		
MATH 7234	Optimization and Complexity	4

Electives

Code	Title	Hours
Complete 16 semester hours from the following:		16
CS 5800	Algorithms	
CS 6140	Machine Learning	
CS 7805	Theory of Computation	
CSYE 6200	Concepts of Object-Oriented Design	
CSYE 6205	Concepts of Object-Oriented Design with C++	
EECE 7360	Combinatorial Optimization	
EMGT 5220	Engineering Project Management	
EMGT 6225	Economic Decision Making	
EMGT 6305	Financial Management for Engineers	
GE 5010	Customer-Driven Technical Innovation for Engineers	
GE 5100	Product Development for Engineers	
IE 5400	Healthcare Systems Modeling and Analysis	
IE 5500	Systems Engineering in Public Programs	
IE 5617	Lean Concepts and Applications	
IE 5630	Biosensor and Human Behavior Measurement	
IE 6300	Manufacturing Methods and Processes	
IE 7200	Supply Chain Engineering	
IE 7215	Simulation Analysis	
IE 7275	Data Mining in Engineering	
IE 7280	Statistical Methods in Engineering	
IE 7285	Statistical Quality Control	
IE 7290	Reliability Analysis and Risk Assessment	
IE 7315	Human Factors Engineering	

MATH 7233	Graph Theory
MATH 7346	Time Series
MATH 7349	Stochastic Calculus and Introduction to No-Arbitrage Finance
OR 7235	Inventory Theory
OR 7240	Integer and Nonlinear Optimization
OR 7310	Logistics, Warehousing, and Scheduling

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Physics

Website (<http://www.northeastern.edu/physics>)

Mark Williams, PhD

Professor and Chair

110 Dana Research Center
617.373.2902
617.373.2943 (fax)
gradphysics@northeastern.edu

Meni Wanunu, PhD

Professor and Director of Graduate Studies, m.wanunu@northeastern.edu
(ma.williams@northeastern.edu)

Nancy Wong

Program Coordinator
617.373.4240
n.wong@northeastern.edu

Physics PhD and Master of Science students at Northeastern University have the opportunity to explore, discover, and apply the fundamental principles that run the universe. The program specializes in several subfields that reflect the forefront research activities of the department. These specializations include biological physics, condensed matter physics, elementary particle physics, nanomedicine, nanophysics, and network science.

The Department of Physics also offers a Graduate Certificate in Nanomedicine. The certificate is designed for students, engineers, and physicians to develop competency and practical skills in the application of nanotechnology to problems in medicine. This program is appropriate for those working in or seeking careers in biotechnology, pharmaceutical, biomedical, or clinical fields.

Programs

Doctor of Philosophy (PhD)

- Physics (p. 398)
- Physics—Advanced Entry (p. 401)

Master of Science (MS)

- Physics (p. 403)

Graduate Certificate

- Nanomedicine (p. 404)

Physics, PhD

The Department of Physics offers a Doctor of Philosophy in Physics with specializations in different subfields that reflect the forefront research activities of the department, including biological physics, condensed matter physics, elementary particle physics, nanomedicine, and network science. The program for the PhD degree consists of the required course work, a qualifying examination, a preliminary research seminar, the completion of a dissertation based upon original research performed by the student, and a dissertation defense upon completion of the dissertation. Based on these measures, students are expected to obtain a graduate-level understanding of basic physics concepts and demonstrate the ability to formulate a research plan, communicate orally a research plan, and conduct and present independent research.

Course Work

The required courses are grouped into two sets, Part 1 and Part 2, having a total of 42 semester hours as a minimum. Part 1 courses (first-year courses) are typically taken prior to the qualifying exam. Students without a master's degree must complete all Part 1 courses in the first year to remain in good academic standing in the graduate program. Part 2 courses (second-year courses) may be taken before or after passing the qualifying exam.

Grade Requirements

The minimum grade required for the successful completion of the Part 1 courses is a B (3.000) average. Students will only be allowed to take the qualifying exam if they fulfill this requirement. The minimum grade required for the successful completion of Part 2 (excluding advanced research) is at least a B (3.000) average for the Part 2 courses. The Part 2 courses, including any makeup of grade-point-average deficiencies (see following), must be completed within two calendar years of passing the qualifying exam. The department expects students to complete the bulk of these courses in the first year after the qualifying exam. The cumulative average will be calculated each semester. No more than two courses or 8 semester hours of credit, whichever is greater, may be repeated in order to satisfy the requirement for the PhD degree. A student who does not maintain a 3.000 cumulative average for two consecutive semesters, or is otherwise not making satisfactory progress toward the PhD degree requirements, may be recommended for termination at the discretion of the graduate committee. Within the above limitations, a required course for which a grade of F is received must be repeated with a grade of C or better and may be repeated only once. In calculating the overall cumulative average, all graduate-level course work completed at the time of clearance for graduation will be counted.

Qualifying Exam Requirement

A student who fails to achieve the required B average for the Part 1 courses must petition the graduate committee in order to remain in the graduate program and be eligible to take the qualifying exam. A student who fails to achieve the required B average for the Part 2 courses must petition the graduate committee in order to remain in the graduate program. All students registered in the PhD program are required to pass a qualifying exam unless they are granted an exemption (see below). The qualifying exam may include both written and oral parts.

The qualifying exam consists of two parts:

- **Part 1:** Classical physics (based on classical mechanics and mathematical methods), electromagnetic theory, and statistical physics.
- **Part 2:** Quantum physics (based on quantum mechanics and its applications) and statistical physics. The content of the qualifying

exam will be based on the content of the first-year courses, excluding Principles of Experimental Physics (PHYS 5318). A syllabus is available and on request will be distributed by the graduate coordinator to any student prior to the exam.

The qualifying exam is given twice yearly: once prior to the start of the fall semester and again within the first two weeks of the start of the spring semester. The exam will consist of one day each on Part 1 (classical physics/mathematical methods, electromagnetism, and statistical physics) and Part 2 (quantum physics and statistical physics).

All students enrolled in the PhD program must take the fall qualifying exam after completing their first-year course of study with the required grade-point average unless they are granted an exemption. Students taking the exam for the first time must take both Part 1 and Part 2. A student who does not pass the exam on his or her first attempt must pass the exam the next time it is given in order to continue in the PhD program. However, a student who passes one part of the first attempt is not required to repeat that part.

Any PhD student will be exempt from taking the quantum part of the qualifying exam if they receive both a grade of B+ or higher in Quantum Theory 1 (PHYS 7315), Quantum Theory 2 (PHYS 7316), and Statistical Physics (PHYS 7305) and have a GPA of 3.670 or higher in those three courses. To meet this standard, they must take all the above courses. Any PhD student will be exempt from taking the classical part of the qualifying exam if they receive both a grade of B+ or higher in Classical Mechanics/Math Methods (PHYS 7301), Electromagnetic Theory (PHYS 7302), and Statistical Physics (PHYS 7305) and have a GPA of 3.670 or higher in these three courses. To meet this standard, they must take all three of these courses.

A student who fails the written exam by less than 5 percent of the total possible score on the second attempt for that part will be automatically given an oral exam. A student who fails the written exam by more than 10 percent is excluded from taking an oral exam. These provisions apply separately to Parts 1 and 2 of the exam.

PhD Candidacy

Degree candidacy is established when the student has passed the qualifying examination and completed both the Part 1 and Part 2 course requirements. PhD candidacy may be achieved before completion of the advanced elective if the elective in the student's specialization is not offered in a given year. The elective must be taken at the next opportunity. PhD degree candidacy is certified by the college. A maximum of five years after the establishment of doctoral degree candidacy is allowed for the completion of degree requirements.

PhD Dissertation Requirement

All PhD students are required to complete a dissertation based upon new and original research in one of the three following options:

- In one of the current theoretical or experimental research programs in the department, under direct supervision of an advisor from the Department of Physics. A dissertation committee will be formed consisting of the advisor, two full-time members of the department, and an additional member, either from within the department or from an outside department or institution.
- In a recognized interdisciplinary field involving another research area of the university, under the direct supervision of a faculty member in that field. In this case, an interdisciplinary committee is formed under the approval of the graduate committee, consisting of the direct supervisor, a departmental advisor, one other member of the

department, and an additional member of either the department or the external department.

- In an area of applied research in one of the industrial or high-technology laboratories associated with the department's industrial PhD program. The direct supervisor is associated with the institution where the research is performed. In this case, a dissertation advisory committee is established by the graduate committee, consisting of the direct supervisor, the departmental advisor, and two other members of the department.

PhD students must select their departmental advisor no later than the end of the spring semester of their second year or their second semester after having passed the qualifying examination, whichever comes first. This process should start as soon as the student has identified a field of research or has passed the qualifying exam.

PhD Dissertation Committee, Preliminary Thesis Proposal, and Preliminary Research Seminar

By the end of the spring semester of the third year or the second semester in which the student is enrolled for PhD dissertation, whichever comes first, each PhD student must have an approved dissertation committee and thesis proposal.

The student (with the aid and approval of his or her thesis advisor) will submit a PhD thesis proposal to the graduate committee clearly outlining a plan to carry out new and original research in the context of previously published research in the scientific literature and also describe the methodologies to be employed. The thesis proposal is limited to 15 pages or less, including references. A proposed makeup of the dissertation committee will be submitted at the same time.

The graduate committee will evaluate the merit of the proposal and make recommendations for improvements when necessary, including any changes to the composition of the dissertation committee. No more than two submissions for a particular proposal may be made. In the case where a revised proposal does not meet a minimum academic standard that provides a basis for making such improvements, the graduate committee may instruct the student to select a different thesis topic or advisor.

After approval by the graduate committee, the proposal is circulated to the general faculty for comments. If the graduate coordinator receives any objections, the proposal will be referred back to the graduate committee for final resolution.

After the proposal and dissertation committee have been approved, the student will make a public presentation of the material in the preliminary research seminar before the dissertation committee in a format open to the full department and advertised one week in advance. The dissertation committee will then meet in closed session to evaluate the seminar. The preliminary research seminar must take place no later than the semester after the thesis proposal is approved and, normally, in the same semester.

In the event that the dissertation advisor is changed, a new committee must be formed, with the approval of the graduate committee, and a new preliminary research seminar given.

PhD Dissertation Defense

The dissertation defense consists of a public presentation, followed by a question period conducted by the dissertation committee and limited to them and the department faculty. The date of the dissertation presentation must be publicized and a copy of the thesis deposited with the graduate program coordinator at least one week prior to the defense. If during this posting period or in the two business days following the defense a written objection to the thesis is lodged with the

department chair by a member of the faculty, the chair may appoint an ad hoc postdefense review committee to provide advice on the scientific issues raised by the objection. Students should note that they must be registered for Dissertation or Dissertation Continuation during the semester in which they defend their dissertation and that they should schedule their defenses well in advance of the end of the semester in order to accommodate the review/waiting period and the time required to deposit the thesis.

The final dissertation defense is held in accordance with the College of Science regulations.

PhD Specialization Options

Students choose a specialization in biological physics; particle physics; condensed matter physics; or, with preapproval of a faculty member, in the following areas: nanomedicine or network science.

Multiple specializations are allowed if the individual requirements for each specialization are met.

Note that the specialization will not appear on the degree diploma or on the official transcript but can be listed as the field of study on CVs and grant proposals.

Transfer Credit

Students must petition in writing through the graduate committee to the director of graduate student services for all transfer credit. A copy of an official transcript must be attached to the Request for Transfer Credit form. A maximum of 8 semester hours of credit obtained at another institution may be accepted toward the PhD degree provided that the credits transferred consist of a grade of B or better, are graduate-level courses, have been earned at an accredited U.S. institution, and have not been used toward any other degree. Grades are not transferred.

Course Waivers

Course waivers may be accepted toward the PhD degree course requirements, though they will not change the numbers of credits required for the program. The student must have received a B grade or better in equivalent graduate-level core courses that have been earned at an accredited institution. Students must petition in writing to the graduate committee for all course waivers and provide documentation in the form of official transcripts to support their petition.

Residence Requirement

The residence requirement is satisfied by at least one year of full-time graduate work (i.e., enrollment in PhD Dissertation, for two consecutive semesters). Students must be continually enrolled throughout the pursuit of the dissertation.

Internship Option

A PhD candidate may spend one year in a participating high-technology, industrial, or government laboratory immediately after passing the PhD qualifying examination. In this program, the student is expected to remain in touch with the university by taking one course per semester at the university and by frequent contact with a faculty advisor. After the one-year paid internship, the student returns to the university to do the dissertation. Eligibility for this program is contingent on acceptance both by the department and by the external laboratory.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations

Annual review

Candidacy

Preliminary research seminar proposal with proposed dissertation committee

Preliminary research seminar talk

Dissertation defense

Core Requirements

Code	Title	Hours
Principles		
PHYS 5318	Principles of Experimental Physics	4
Computational		
PHYS 7301	Classical Mechanics/Math Methods	4
PHYS 7305	Statistical Physics	4
PHYS 7321	Computational Physics	4
Theory		
PHYS 7302	Electromagnetic Theory	4
PHYS 7315	Quantum Theory 1	4
PHYS 7316	Quantum Theory 2	4
Research		
PHYS 7210	Introduction to Research in Physics (Take this repeatable course twice)	0
PHYS 9984	Advanced Research	1-8

Electives

Code	Title	Hours
Complete 8 semester hours from the following:		8
If preapproved to specialize in nanomedicine or network science, consult program director.		
PHYS 7323	Elementary Particle Physics	
PHYS 7324	Condensed Matter Physics	
PHYS 7325	Quantum Field Theory 1	
PHYS 7731	Biological Physics 1	
Specialization Elective		
Choose 4 semester hours from your specialization below:		4

PhD Specialization Options

A specialization is required.¹

Note: Specialization in nanomedicine or network science requires prior approval.

Code	Title	Hours
Biological Physics ²		
PHYS 7731	Biological Physics 1	4
PHYS 7741	Biological Physics 2	4
Particle Physics ³		
PHYS 7323	Elementary Particle Physics	4
PHYS 7326	Quantum Field Theory 2	4
or PHYS 7733	Topics: Elementary Particle Physics and Cosmology	
Condensed Matter Physics		
PHYS 7324	Condensed Matter Physics	4
PHYS 7734	Topics: Condensed Matter Physics	4
Nanomedicine		
NNMD 5270	Introduction to Nanomedicine	3

NNMD 5370	Nanomedicine Research Techniques	4
Network Science		
PHYS 5116	Complex Networks and Applications	4
PHYS 7331	Network Science Data	4

Dissertation

Code	Title	Hours
Taken third year and beyond.		
Complete the following (repeatable) course twice:		
PHYS 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
PHYS 9996	Dissertation Continuation	

Program Credit/GPA Requirements

42 total semester hours required
Minimum 3.000 GPA required

- Note that the specialization will not appear on the degree diploma or on the official transcript but can be listed as the field of study on CVs and grant proposals.
- By approval of the graduate committee, biological physics students may substitute graduate courses in biology, physics, or chemistry from the following list instead of PHYS 7741: Biochemistry (BIOL 6300), Molecular Cell Biology (BIOL 6301), Optical Methods of Analysis (CHEM 5613), Molecular Modeling (CHEM 5638). Additional appropriate courses may also be substituted by approval of the physics graduate committee.
- Elementary Particle Physics (PHYS 7323) is required for a specialization in particle physics. The advanced elective may be Topics: Elementary Particle Physics and Cosmology (PHYS 7733) OR Quantum Field Theory 2 (PHYS 7326).

Plan of Study

Year 1			
Fall	Hours	Spring	Hours
PHYS 7210	0	PHYS 5318	4
PHYS 7301	4	PHYS 7210	0
PHYS 7302	4	PHYS 7305	4
PHYS 7315	4	PHYS 7316	4
		12	12
Year 2			
Fall	Hours	Spring	Hours
PHYS 7321	4	PHYS 9984	1-8
Electives	8	Advanced elective	4
		12	5-12
Year 3			
Fall	Hours	Spring	Hours
PHYS 9990	0	PHYS 9990	0
		0	0
Total Hours: 41-48			

Physics, PhD—Advanced Entry

The Department of Physics offers a Doctor of Philosophy in Physics with specializations in different subfields that reflect the forefront research activities of the department, including biological physics, condensed matter physics, elementary particle physics, nanomedicine,

and network science. The program for the PhD degree consists of the required course work, a qualifying examination, a preliminary research seminar, the completion of a dissertation based upon original research performed by the student, and a dissertation defense upon completion of the dissertation. Based on these measures, students are expected to obtain a graduate-level understanding of basic physics concepts and demonstrate the ability to formulate a research plan, communicate orally a research plan, and conduct and present independent research.

Course Work

Students entering with an approved MS degree from a U.S. institution will be required to take 10 semester hours of courses. The courses required will be determined by the graduate coordinator based on the student's transcripts.

Grade Requirements

The minimum grade required is a B (3.000) average. A student who does not maintain a 3.000 cumulative average for two consecutive semesters, or is otherwise not making satisfactory progress toward the PhD degree requirements, may be recommended for termination at the discretion of the graduate committee.

Qualifying Exam Requirement

Any new, entering student with a master's degree from a U.S. institution may take the qualifying exam upon arriving at Northeastern University. Failure of the exam at this time will not be used to limit the two opportunities to take the examination in the future. All students registered in the PhD program are required to pass a qualifying exam unless they are granted an exemption. The qualifying exam may include both written and oral parts.

The qualifying exam consists of two parts:

- Part 1:** Classical physics (based on classical mechanics and mathematical methods), electromagnetic theory, and statistical physics.
- Part 2:** Quantum physics (based on quantum mechanics and its applications) and statistical physics. A syllabus is available and on request will be distributed by the graduate coordinator to any student prior to the exam.

The qualifying exam is given twice yearly: once prior to the start of the fall semester and again within the first two weeks of the start of the spring semester. The exam will consist of one day each on Part 1 (classical physics/mathematical methods, electromagnetism, and statistical physics) and Part 2 (quantum physics and statistical physics).

Students who enter with a Master of Science degree from a U.S. institution may take the exam at the first opportunity after entering the program.

All students enrolled in the PhD program must take the fall qualifying exam after completing their first-year course of study with the required grade-point average. Students taking the exam for the first time must take both Part 1 and Part 2. A student who does not pass the exam on his or her first attempt must pass the exam the next time it is given in order to continue in the PhD program. However, a student who passes one part of the first attempt is not required to repeat that part.

A student who fails the written exam by less than 5 percent of the total possible score on the second attempt for that part will be automatically given an oral exam. A student who fails the written exam by more than 10 percent is excluded from taking an oral exam. These provisions apply separately to Parts 1 and 2 of the exam.

PhD Candidacy

Degree candidacy is established when the student has passed the qualifying examination and completed 10 semester hours of courses. PhD degree candidacy is certified by the college. A maximum of five years after the establishment of doctoral degree candidacy is allowed for the completion of degree requirements.

PhD Dissertation Requirement

All PhD students are required to complete a dissertation based upon new and original research in one of the three following options:

- In one of the current theoretical or experimental research programs in the department, under direct supervision of an advisor from the Department of Physics. A dissertation committee will be formed consisting of the advisor, two full-time members of the department, and an additional member, either from within the department or from an outside department or institution.
- In a recognized interdisciplinary field involving another research area of the university, under the direct supervision of a faculty member in that field. In this case, an interdisciplinary committee is formed under the approval of the graduate committee, consisting of the direct supervisor, a departmental advisor, one other member of the department, and an additional member of either the department or the external department.
- In an area of applied research in one of the industrial or high-technology laboratories associated with the department's industrial PhD program. The direct supervisor is associated with the institution where the research is performed. In this case, a dissertation advisory committee is established by the graduate committee, consisting of the direct supervisor, the departmental advisor, and two other members of the department.

PhD students must select their departmental advisor no later than the end of the spring semester of their second year or their second semester after having passed the qualifying examination, whichever comes first. This process should start as soon as the student has identified a field of research or has passed the qualifying exam.

PhD Dissertation Committee, Preliminary Thesis Proposal, and Preliminary Research Seminar

By the end of the spring semester of the third year or the second semester in which the student is enrolled for PhD dissertation, whichever comes first, each PhD student must have an approved dissertation committee and thesis proposal.

The student (with the aid and approval of his or her thesis advisor) will submit a PhD thesis proposal to the graduate committee clearly outlining a plan to carry out new and original research in the context of previously published research in the scientific literature and also describe the methodologies to be employed. The thesis proposal is limited to 15 pages or less, including references. A proposed makeup of the dissertation committee will be submitted at the same time.

The graduate committee will evaluate the merit of the proposal and make recommendations for improvements when necessary, including any changes to the composition of the dissertation committee. No more than two submissions for a particular proposal may be made. In the case where a revised proposal does not meet a minimum academic standard that provides a basis for making such improvements, the graduate committee may instruct the student to select a different thesis topic or advisor.

After approval by the graduate committee, the proposal is circulated to the general faculty for comments. If the graduate coordinator receives

any objections, the proposal will be referred back to the graduate committee for final resolution.

After the proposal and dissertation committee have been approved, the student will make a public presentation of the material in the preliminary research seminar before the dissertation committee in a format open to the full department and advertised one week in advance. The dissertation committee will then meet in closed session to evaluate the seminar. The preliminary research seminar must take place no later than the semester after the thesis proposal is approved and, normally, in the same semester.

In the event that the dissertation advisor is changed, a new committee must be formed, with the approval of the graduate committee, and a new preliminary research seminar given.

PhD Dissertation Defense

The dissertation defense consists of a public presentation, followed by a question period conducted by the dissertation committee and limited to them and the department faculty. The date of the dissertation presentation must be publicized and a copy of the thesis deposited with the graduate program coordinator at least one week prior to the defense. If during this posting period or in the two business days following the defense a written objection to the thesis is lodged with the department chair by a member of the faculty, the chair may appoint an ad hoc postdefense review committee to provide advice on the scientific issues raised by the objection. Students should note that they must be registered for Dissertation or Dissertation Continuation during the semester in which they defend their dissertation and that they should schedule their defenses well in advance of the end of the semester in order to accommodate the review/waiting period and the time required to deposit the thesis.

The final dissertation defense is held in accordance with the College of Science regulations.

Residence Requirement

The residence requirement is satisfied by at least one year of full-time graduate work (i.e., enrollment in PhD Dissertation, for two consecutive semesters). Students must be continually enrolled throughout the pursuit of the dissertation.

Internship Option

A PhD candidate may spend one year in a participating high-technology, industrial, or government laboratory immediately after passing the PhD qualifying examination. In this program, the student is expected to remain in touch with the university by taking one course per semester at the university and by frequent contact with a faculty advisor. After the one-year paid internship, the student returns to the university to do the dissertation. Eligibility for this program is contingent on acceptance both by the department and by the external laboratory.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations
Annual review
Candidacy
Preliminary research seminar proposal with proposed dissertation committee
Preliminary research seminar talk
Dissertation defense

*Note: Any new, entering student with a master's degree from a U.S. institution may take the qualifying exam upon arriving at Northeastern University. Failure of the exam at this time will not be used to limit the two opportunities to take the examination in the future

Core Requirements

Code	Title	Hours
Course Work		
	Students entering with an approved MS degree from a U.S. institution will be required to take 10 semester hours of courses. The courses required will be determined by the graduate coordinator based on the student's transcripts.	10

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
PHYS 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
PHYS 9996	Dissertation Continuation	

Program Credit/GPA Requirements

10 total semester hours required
Minimum 3.000 GPA required

Physics, MS

The Department of Physics offers Master of Science degrees with several options. The standard physics MS can be obtained by taking a specified set of courses without an MS thesis. Alternatively, an MS thesis may substitute for 8 credit hours of course work. Both of these options may be pursued either full time or part time. Upon completion of the MS degree in physics, students should be able to apply graduate-level knowledge and solve problems in the areas of electrodynamics, quantum mechanics, classical mechanics, statistical mechanics, and advanced mathematical methods.

Grade Requirements

To qualify for the MS degree, a cumulative average of 3.000, equivalent to a grade of B, must be obtained. No more than two courses or 6 semester hours of credit, whichever is greater, may be repeated in order to satisfy the requirements for the MS degree. A student who does not maintain a 3.000 cumulative average for two consecutive semesters, or is otherwise not making satisfactory progress toward the MS degree requirements, may be recommended for termination at the discretion of the graduate committee.

Within the above limitations, a required course for which a grade of F is received must be repeated with a grade of C or better and may be repeated only once. Elective courses in which an F has been received may be repeated once to obtain a C or better.

Transfer Credit

Students must petition, in writing, through the graduate committee to the director of graduate student services for all transfer credit. An official transcript must be attached to the Request for Transfer Credit form. A maximum of 8 semester hours of credit obtained at another institution may be accepted toward the MS degree provided that the credits transferred consist of a grade of B or better in graduate-level courses, have been earned at an accredited U.S. institution, and have not been used toward any other degree. Grades are not transferred.

Current MS Students Interested in the PhD Program

MS students interested in applying to the PhD program must complete the internal admission application.

Special Student Status

Special students are allowed to earn credit for a maximum of 12 semester hours. Students interested in taking more than 12 semester hours must make a formal application to the degree program online.

Course Work

There is a total of 32 semester hours of course work required as a minimum. There are two options for the MS degree:

Option 1 is the standard physics MS with or without an MS thesis. Up to 8 semester hours of courses can be substituted with an MS thesis.

Option 2 is the MS with a specialization (up to 23 semester hours of courses) in applied physics, engineering physics, biophysics, chemical physics, material physics, mathematical physics, and computational physics.

Graduate students desiring the MS with thesis option should arrange a thesis with a faculty advisor. The student may choose a field of research from three possible areas as outlined under the PhD dissertation section. The thesis must demonstrate the individual's capacity to execute independent work based on original material. The thesis must be approved by the graduate committee. The thesis may be completed in one semester (e.g., summer semester) or in consecutive semesters. Students who have not completed their thesis after the required number of thesis credits (12 semester hours) must register for MS Thesis with the appropriate course number each subsequent semester until the thesis is approved by the graduate school and submitted electronically to Proquest.

Both options require a minimum of 32 semester hours of graduate credit. The 32 semester hours may include up to 8 semester hours of transfer credit as approved by the physics department's graduate committee and the graduate school.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Computational Course Work		
PHYS 7301	Classical Mechanics/Math Methods	4
PHYS 7305	Statistical Physics	4
PHYS 7321	Computational Physics	4
Theory Course Work		
PHYS 7302	Electromagnetic Theory	4
PHYS 7315	Quantum Theory 1	4
PHYS 7316	Quantum Theory 2	4

Options

- Course work (p.)
- Thesis (p. 404)
- Thesis with specialization (p. 404)¹

COURSE WORK OPTION

Note: In consultation with your faculty advisor you may choose an area of specialization from physics, engineering, chemistry, biology, mathematics, psychology, or computer science. Additional elective courses are listed in the PhD program.

Code	Title	Hours
Electives		
Complete 8 semester hours from the following:		8
PHYS 5111	Astrophysics and Cosmology	
PHYS 5113	Introduction to Particle and Nuclear Physics	
PHYS 5115	Quantum Mechanics	
PHYS 5116	Complex Networks and Applications	
PHYS 5260	Introduction to Nanoscience and Nanotechnology	
PHYS 5318	Principles of Experimental Physics	
PHYS 7323	Elementary Particle Physics	
PHYS 7324	Condensed Matter Physics	
PHYS 7731	Biological Physics 1	

THESIS

Code	Title	Hours
Thesis		
PHYS 7990	Thesis	1-4

Elective

Complete 4 semester hours from the following:		4
PHYS 5111	Astrophysics and Cosmology	
PHYS 5113	Introduction to Particle and Nuclear Physics	
PHYS 5115	Quantum Mechanics	

THESIS WITH SPECIALIZATION¹

Applied physics, engineering physics, biophysics, chemical physics, materials physics, mathematical physics, or computational physics.

Code	Title	Hours
Thesis		
PHYS 7990	Thesis	1-4

Specialization

Complete course work in consultation with faculty advisor.		8-12
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Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

¹ Note that the specialization will not appear on the degree diploma or on the official transcript but can be listed as the field of study on CVs and grant proposals.

Plan of Study

Year 1			
Fall	Hours	Spring	Hours
PHYS 7301	4	PHYS 7305	4
PHYS 7302	4	PHYS 7316	4
PHYS 7315	4	PHYS 7321	4
		12	12

Year 2

Fall	Hours
Elective or thesis	4
Additonal elective	4
8	

Total Hours: 32

Nanomedicine, Graduate Certificate

The Graduate Certificate in Nanomedicine is designed for scientists, engineers, and physicians to develop competency and practical skills in the application of nanotechnology to problems in medicine. This program is appropriate for those working in or seeking careers in biotechnology, pharmaceutical, biomedical, or clinical fields. Program participants receive advanced training in the fundamental and applied aspects of nanomedicine, as well as nanomedicine commercialization from bench to bedside. The curriculum includes a variety of activities for scientific and professional development, including lectures, case studies, journal readings, term projects, and close interactions with distinguished faculty and experts drawn from academia, hospitals, industry, and government.

The certificate consists of five nanomedicine (NNMD) courses, totaling 12 semester-hour credits. This is a part-time, 12-credit graduate program that can be completed in as little as two semesters.

Program Requirements

Complete all requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
NNMD 5270	Introduction to Nanomedicine	3
NNMD 5272	Nanomedicine Seminar 1	1
NNMD 5274	Nanomedicine Seminar 2	1
NNMD 5370	Nanomedicine Research Techniques	4
NNMD 5470	Nano/Biomedical Commercialization: Concept to Market	3

Electives

Students may apply 4 semester hours of elective credit to substitute for NNMD 5370:

BIOE 5100	Medical Physiology	
BIOL 5307	Biological Electron Microscopy	
BIOL 6381	Ethics in Biological Research	
BIOT 5145	Basic Biotechnology Lab Skills	
BIOT 5225	Managing and Leading a Biotechnology Company	
BIOT 5227	Economics and Marketing for Biotechnology Managers	
BIOT 5700	Molecular Interactions of Proteins in Biopharmaceutical Formulations	
BIOT 7245	Biotechnology Applications Laboratory	
CHEM 7247	Advances in Nanomaterials	
CHME 7350	Transport Phenomena	
PHSC 6210	Drug Design, Evaluation, and Development	
PHSC 6212	Research Skills and Ethics	

PHSC 6216	Human Physiology and Pathophysiology
PHSC 6226	Imaging in Medicine and Drug Discovery
PHSC 6290	Biophysical Methods in Drug Discovery
PHYS 5260	Introduction to Nanoscience and Nanotechnology
PHYS 7731	Biological Physics 1
PMST 6252	Pharmacokinetics and Drug Metabolism
PMST 6254	Advanced Drug Delivery System
POLS 7333	Science, Technology, and Public Policy

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Psychology

Website (<http://www.northeastern.edu/psychology>)

Joanne L. Miller, PhD

Matthews Distinguished University Professor and Chair

125 Nightingale Hall
617.373.3076
617.373.8714 (fax)

Judith Hall, PhD

University Distinguished Professor and Director of Graduate Studies,
j.hall@northeastern.edu (e.cram@northeastern.edu)

Kelsy Smith, Staff Assistant, kel.smith@northeastern.edu
(kel.smith@northeastern.edu)

The Department of Psychology PhD program gives students a research-intensive environment within a close-knit community of faculty and students. There are four main areas of specialization—behavioral neuroscience, cognition, perception, and personality/social—with crosscutting themes in health, affective science, and life span development.

The students are apprentices in faculty laboratories as they work to become experts in psychological science. During the time in the program, the responsibility for collaboration in research shifts from faculty member to student, culminating in the student's dissertation.

In addition to the apprenticeship relationship, there are required courses, advanced seminars, a colloquium series, assignments as teaching assistants, and work leading up to the dissertation.

Programs

Doctor of Philosophy (PhD)

- Psychology (p. 405)
- Psychology—Advanced Entry (p. 406)

Psychology, PhD

The PhD program in the Department of Psychology covers a wide spectrum of contemporary behavioral science within a close-knit community of faculty and students. The program offers four distinct areas of experimental emphasis: behavioral neuroscience, cognition,

perception, and social/personality. The program does not offer training in clinical or counseling psychology. The objective of the PhD program is to prepare students to become experts in research and teaching in psychology. To accomplish this goal, the department takes a mentoring approach whereby the graduate students are apprentices in faculty laboratories, working closely with their faculty mentors throughout their time in the program. The basic apprenticeship relationship is supplemented by other activities, such as required courses (concentrated in the first and second years), advanced seminars and/or course work in this as well as other departments or universities, a colloquium series, assignments as teaching assistants, the master's project, and the dissertation and its oral defense. After the first year, the structure of the doctoral program, including course work, is flexible and assumes that the process of learning and scientific discovery must be individualized. Graduate students also have an opportunity to develop their teaching and research skills through close mentoring of undergraduate research assistants. The PhD program is a five-year, twelve-months-per-year program.

The dissertation committee must include at least three tenured or tenure-track faculty members from within the psychology department—two from the student's interest area and one from another area. The oral defense committee consists of the dissertation committee plus additional tenured and tenure-track faculty members from the psychology department.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

First-year paper
Master's proposal
Master's paper
Master's presentation
Annual review
Dissertation committee
Dissertation proposal
Dissertation
Dissertation defense
At least two assigned courses as teaching assistant

Core Requirements

All graduate courses within the Department of Psychology are graded S/ U. A grade of S is required in each psychology department course.

Code	Title	Hours
Proseminar		
Complete 12 semester hours from the following:		12
PSYC 5100	Proseminar in Psycholinguistics	
PSYC 5110	Proseminar in Cognition	
PSYC 5120	Proseminar in Sensation	
PSYC 5130	Proseminar in Perception	
PSYC 5140	Proseminar in Biology of Behavior	
PSYC 5150	Proseminar in Clinical Neuroscience	
PSYC 5160	Proseminar in Personality	
PSYC 5170	Proseminar in Social Psychology	
Quantitative Methods		
PSYC 5180	Quantitative Methods 1	3
PSYC 5181	Quantitative Methods 2	3
Ethics		

PSYC 7302	Ethics and Professional Issues	3
Research		
PSYC 7301	Research Methodologies Psychology	3
Project		
Take the following (repeatable) course three times:		9
PSYC 8401	Research Project	
Thesis		
Take the following (repeatable) course twice:		6
PSYC 7990	Thesis	

Electives

Code	Title	Hours
Complete 11 semester hours from the following:		11
Note: Proseminars not taken to fulfill core requirements and courses outside the department may be taken if approved by faculty advisor and Director of Graduate Studies.		
PSYC 7200 to PSYC 7300		
PSYC 5100	Proseminar in Psycholinguistics	
PSYC 5110	Proseminar in Cognition	
PSYC 5120	Proseminar in Sensation	
PSYC 5130	Proseminar in Perception	
PSYC 5140	Proseminar in Biology of Behavior	
PSYC 5150	Proseminar in Clinical Neuroscience	
PSYC 5160	Proseminar in Personality	
PSYC 5170	Proseminar in Social Psychology	

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
PSYC 9990	Dissertation	
Complete the following (repeatable) course until graduation:		
PSYC 9996	Dissertation Continuation	

Program Credit/GPA Requirements

50 total semester hours required
 Minimum 3.000 GPA required

Plan of Study

Year 1					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
Complete 6 semester hours of the following:	6	Complete 6 semester hours of the following:	6	PSYC 8401	3
PSYC 5100		PSYC 5100		Elective	6
PSYC 5110		PSYC 5110			
PSYC 5120		PSYC 5120			
PSYC 5130		PSYC 5130			
PSYC 5140		PSYC 5140			
PSYC 5150		PSYC 5150			
PSYC 5160		PSYC 5160			
PSYC 5170		PSYC 5170			
Complete the following:	6	Complete the following:	6		

Year 2					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PSYC 5180		PSYC 5181			
PSYC 8401		PSYC 8401			
	12		12		9
PSYC 7990	3	Complete one of the following:	3	PSYC 7996	0
Elective	5	PSYC 7301			
		PSYC 7302			
		Complete the following:	3		
		PSYC 7990			
	8		6		0
Year 3					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PSYC 9990	0	Complete one of the following:	3	PSYC 9996	0
		PSYC 7301			
		PSYC 7302			
		Complete the following:	0		
		PSYC 9990			
	0		3		0
Year 4					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PSYC 9996	0	PSYC 9996	0	PSYC 9996	0
	0		0		0
Year 5					
Fall	Hours	Spring	Hours	Summer Full Semester	Hours
PSYC 9996	0	PSYC 9996	0	PSYC 9996	0
	0		0		0

Total Hours: 50

Psychology, PhD—Advanced Entry

The PhD program in the Department of Psychology covers a wide spectrum of contemporary behavioral science within a close-knit community of faculty and students. The program offers four distinct areas of experimental emphasis: behavioral neuroscience, cognition, perception, and social/personality. The program does not offer training in clinical or counseling psychology. The objective of the PhD program is to prepare students to become experts in research and teaching in psychology. To accomplish this goal, the department takes a mentoring approach whereby the graduate students are apprentices in faculty laboratories, working closely with their faculty mentors throughout their time in the program. The basic apprenticeship relationship is supplemented by other activities, such as required courses (concentrated in the first and second years), advanced seminars and/or course work in this as well as other departments or universities, a colloquium series,

assignments as teaching assistants, the master's project, and the dissertation and its oral defense. After the first year, the structure of the doctoral program, including course work, is flexible and assumes that the process of learning and scientific discovery must be individualized. Graduate students also have an opportunity to develop their teaching and research skills through close mentoring of undergraduate research assistants. The PhD program is a five-year, 12-months-per-year program.

For students who enter the program with a suitable master's degree, degree candidacy is established through completion of a set of requirements determined on an individual basis. An additional 20 semester hours beyond the master's degree are required for the PhD degree. The dissertation committee must include at least three tenured or tenure-track faculty members from within the psychology department—two from the student's interest area and one from another area. The oral defense committee consists of the dissertation committee plus additional tenured and tenure-track faculty members from the psychology department.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated. Individual programs of study will be tailored to acknowledge students' previous course work.

Milestones

Master's presentation
Annual review
Dissertation committee
Dissertation proposal
Dissertation
Dissertation defense
At least two assigned courses as teaching assistant

Core Requirements

A grade of S is required in each psychology department course.

Code	Title	Hours
	Consult your faculty advisor and director of graduate studies for acceptable course work.	10

Electives

Code	Title	Hours
	Consult your faculty advisor and graduate coordinator for acceptable electives.	10

Dissertation

Code	Title	Hours
Complete the following (repeatable) course twice:		
PSYC 9990	Dissertation	

Program Credit/GPA Requirements

20 total semester hours required
Minimum 3.000 GPA required

Note: The number of semester hours to complete this program may be more than 20. The number of semester hours and the specific required courses will be determined by a review of previous course work by the graduate coordinator and faculty advisor.

Interdisciplinary

Programs

Doctor of Philosophy (PhD)

- Network Science (p. 226)

Master of Science (MS)

- Applied Physics and Engineering (p. 161)
- Environmental Science and Policy (p. 389)

Network Science, PhD

Website (<http://www.networkscienceinstitute.org>)

David Lazer, PhD

Distinguished Professor

College of Social Sciences and Humanities and College of Computer and Information Science

Network Science Program

177 Huntington Avenue, 10th Floor

617.373.8856

617.373.5884 (fax)

networkscience@northeastern.edu

The PhD program in network science aims to enhance our understanding of networks arising from the interplay of human behavior, sociotechnical infrastructures, information diffusion, and biological agents. This is an intrinsically multidisciplinary activity, with members of the network science community representing a wide range of fields including computer science, information science, complexity, physics, sociology, communication, organizational behavior, political science, and epidemiology. This is an interdisciplinary doctoral program focused on training students in network science across several colleges—including the College of Science, the College of Computer and Information Science, the College of Social Sciences and Humanities, Bouvé College of Health Sciences, the College of Engineering, and the College of Arts, Media and Design—with several research areas, including computational sciences, information sciences, health and life sciences, social sciences, and theoretical physics. See other collaborating colleges' catalog sections for possible concentration courses.

Course work is dependent on a student's area of research and subject to prior approval by their faculty advisor. Required course work includes the following: three foundational courses in network science—Complex Networks and Applications (PHYS 5116); Network Science Data (PHYS 7331); and Social Networks (POLS 7334)—at least one supplemental course in network science—Network Science Data 2 (PHYS 7332); Social Networks (POLS 7334); or Data Mining Techniques (CS 6220)—12 semester hours of elective course work defined by their area of research; and two research courses with core faculty of the program. A minimum of 32 credit hours of course work is required, though the graduate program committee may recommend additional course work based on student research interests.

Satisfactory progress in the program will be ongoing and formally evaluated at the end of both the first and second years of the program. Students are expected to maintain a cumulative GPA of 3.000 or better in all course work. Students are not allowed to retake courses. A student who does not maintain the 3.000 GPA, or is not making satisfactory progress on their dissertation research, may be recommended for termination by the graduate program committee.

Each student will have one primary research advisor from the network science doctoral program faculty.

Students will be expected to select their research advisor by the end of the spring semester of their second year in the program.

The dissertation committee consists of at least four members: the dissertation advisor, one additional network science doctoral program faculty member, one member expert in the specific topic of research (can be from outside the university), and one additional tenured/tenure-track faculty member from the concentration department/conferring college. The dissertation advisor must be a full-time tenured or tenure-track member of the Northeastern University faculty. Students may repeat the comprehensive examination once if they are unsuccessful.

Degree Candidacy

A student is considered a PhD candidate upon completion of all required course work with a minimum cumulative GPA of 3.000, satisfactory completion of the qualification exam, and satisfactory completion of the comprehensive exam.

Qualifying Examination

The qualification exam will be an oral examination of the material during the students' course work. The exam will be an hour in length and consist of questions selected by network science faculty who comprise the qualifying examination and dissertation committee. Students will receive 50 to 80 potential questions, which they must be prepared to answer, one month before the exam. The exam will consist of a subset of these questions. The qualifying exam will be offered twice annually, in the fall and spring term. All students are required to initially sit for the exam in the fall, typically in their third year of the PhD program. Students who do not pass the qualifying exam on their first attempt are expected to retake the exam in the spring term. Students may sit for the qualifying exam no more than twice.

Students who fail to complete the qualifying examination but who have completed all the PhD program's required course work with a cumulative GPA of 3.000 or better will be awarded a terminal Master of Science in Network Science degree. Note that no students will be admitted directly into the network science program for receipt of a master's degree.

Comprehensive Examination

Students must submit a written dissertation proposal to the qualifying examination and dissertation committee. The proposal should identify relevant literature, the research problem, the research plan, and the potential impact on the field. A presentation of the proposal will be made in an open forum, and the student must successfully defend it before the qualifying examination and dissertation committee. The comprehensive exam must precede the final dissertation defense by at least one year.

Dissertation Defense

A PhD student must complete and defend a dissertation that involves original research in network science. The dissertation defense must adhere to the College of Science policies.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review
Qualifying exam
Dissertation committee
Dissertation proposal

Dissertation defense

Core Requirements

Code	Title	Hours
Networks		
PHYS 5116	Complex Networks and Applications	4
PHYS 7331	Network Science Data	4
PHYS 7335	Dynamical Processes in Complex Networks	4
Choose one of the following:		4
PHYS 7332	Network Science Data 2	
CS 6220	Data Mining Techniques	
POLS 7334	Social Networks	
Research		
Complete the following (repeatable) course twice:		
NETS 8984	Research	1-4

Specializations

Choose one of the following specializations or 12 semester hours of elective course work from the electives course list:

- Computer Science (p.)
- Political Science (p.)
- Epidemiology (p. 228)
- Physics (p. 228)
- Math (p. 228)
- Electives (p. 228)

COMPUTER SCIENCE

Code	Title	Hours
Choose three from the following:		
CS 6140	Machine Learning	12
CS 6220	Data Mining Techniques	
CS 6240	Large-Scale Parallel Data Processing	
CS 7800	Advanced Algorithms	

POLITICAL SCIENCE

Code	Title	Hours
POLS 7200	Perspectives on Social Science Inquiry	4
POLS 7201	Research Design	4
POLS 7202	Quantitative Techniques	4

EPIDEMIOLOGY

Code	Title	Hours
PHTH 5202	Introduction to Epidemiology	3
PHTH 5224	Social Epidemiology	3
Electives: Choose two from the elective course list below.		6-8

PHYSICS

Code	Title	Hours
Choose three from the following:		
PHYS 5318	Principles of Experimental Physics	
PHYS 7305	Statistical Physics	
PHYS 7731	Biological Physics 1	
PHYS 7321	Computational Physics	

MATH

Code	Title	Hours
Choose three from the following:		12
MATH 7241	Probability 1	
MATH 7233	Graph Theory	
MATH 7375	Topics in Topology	
MATH 7733	Readings in Graph Theory	

ELECTIVES

Complete a minimum of 12 semester hours of elective course work related to your area of research. Common electives include the following:

Code	Title	Hours
NETS 7341	Network Economics	4
NETS 7345	The Practice of Interdisciplinary Scholarship	4
NETS 7350	Bayesian and Network Statistics	4
NETS 7983	Topics	4
NETS 8941	Network Science Literature Review Seminar	2
MATH 7233	Graph Theory	4
CS 5800	Algorithms	4
CS 6140	Machine Learning	4
CS 7180	Special Topics in Artificial Intelligence	4
CS 7295	Special Topics in Data Visualization	4
PHYS 7337	Statistical Physics of Complex Networks	4
PPUA 5301	Introduction to Computational Statistics	4

Dissertation

Code	Title	Hours
Complete one of the following (repeatable) course twice:		
NETS 9990	Dissertation	

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Applied Physics and Engineering, MS

The combined MS program in applied physics and engineering allows graduate students to receive training in one of three concentrations of the electrical and computer engineering department while also receiving fundamental graduate-level physics training that is relevant to that area.

Thesis Option

A student may complete an additional 8 semester hours of thesis. Students may register for an additional two semesters of thesis work, Thesis (EECE 7990) (4 semester hours) or Thesis (PHYS 7990) (4 semester hours), depending on the affiliation of the thesis advisor. A thesis committee is composed of an advisor and two faculty members from physics or electrical engineering.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Concentrations

Complete one of the following concentrations:

- Microsystems, Materials, and Devices (p. 161)
- Electromagnetics, Plasma, and Optics (p. 162)
- Analysis, Modeling, and Computation (p. 162)

MICROSYSTEMS, MATERIALS, AND DEVICES

Code	Title	Hours
Core Courses		
EECE 7201	Solid State Devices	4
PHYS 7324	Condensed Matter Physics	4
Engineering Course Work		
Complete 12 semester hours from the following:		12
EECE 5606	Micro- and Nanofabrication	
EECE 5680	Electric Drives	
EECE 7204	Applied Probability and Stochastic Processes	
EECE 7240	Analog Integrated Circuit Design	
EECE 7242	Integrated Circuits for Mixed Signals and Data Communication	
EECE 7244	Introduction to Microelectromechanical Systems (MEMS)	
EECE 7245	Microwave Circuit Design for Wireless Communication	
EECE 7353	VLSI Design	
EECE 7398	Special Topics	
Physics Course Work		
Complete 12 semester hours from the following:		12
PHYS 5318	Principles of Experimental Physics	
PHYS 7301	Classical Mechanics/Math Methods	
PHYS 7302	Electromagnetic Theory	
PHYS 7305	Statistical Physics	
PHYS 7315	Quantum Theory 1	
PHYS 7316	Quantum Theory 2	
PHYS 7321	Computational Physics	
PHYS 7331	Network Science Data	
PHYS 7734	Topics: Condensed Matter Physics	

ELECTROMAGNETICS, PLASMA, AND OPTICS

Code	Title	Hours
Core Courses		
EECE 7203	Complex Variable Theory and Differential Equations	4
PHYS 7302	Electromagnetic Theory	4
Engineering Course Work		
Complete 12 semester hours from the following:		12
EECE 5648	Biomedical Optics	
EECE 5698	Special Topics in Electrical and Computer Engineering (Subsurface Imaging)	
EECE 7105	Optics for Engineers	
EECE 7202	Electromagnetic Theory 1	
EECE 7245	Microwave Circuit Design for Wireless Communication	
EECE 7270	Electromagnetic Theory 2	

EECE 7271	Computational Methods in Electromagnetics
EECE 7275	Antennas and Radiation
EECE 7293	Modern Imaging

Physics Course Work

Complete 12 semester hours from the following:	12
PHYS 5318	Principles of Experimental Physics
PHYS 7305	Statistical Physics
PHYS 7315	Quantum Theory 1
PHYS 7316	Quantum Theory 2
PHYS 7321	Computational Physics
PHYS 7324	Condensed Matter Physics
PHYS 7731	Biological Physics 1

ANALYSIS, MODELING, AND COMPUTATION

Code	Title	Hours
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Core Courses

EECE 7205	Fundamentals of Computer Engineering	4
PHYS 7321	Computational Physics	4

Engineering Course Work

Complete 12 semester hours from the following:	12
EECE 5639	Computer Vision
EECE 5640	High-Performance Computing
EECE 5642	Data Visualization
EECE 5643	Simulation and Performance Evaluation
EECE 5644	Introduction to Machine Learning and Pattern Recognition
EECE 7205	Fundamentals of Computer Engineering
EECE 7271	Computational Methods in Electromagnetics
EECE 7352	Computer Architecture
EECE 7353	VLSI Design
EECE 7360	Combinatorial Optimization
EECE 7374	Fundamentals of Computer Networks
EECE 7376	Operating Systems: Interface and Implementation

Physics Course Work

Complete 12 semester hours from the following:	12
PHYS 5116	Complex Networks and Applications
PHYS 5318	Principles of Experimental Physics
PHYS 7301	Classical Mechanics/Math Methods
PHYS 7305	Statistical Physics
PHYS 7331	Network Science Data
PHYS 7335	Dynamical Processes in Complex Networks

Thesis Option

Students may register for an additional two semesters of thesis work, Thesis (EECE 7990) or Thesis (PHYS 7990), depending on the affiliation of the thesis advisor. Thesis credits cannot be substituted for any of the course work listed above. This option requires a total of 40 semester hours for the master's degree.

Program Credit/GPA Requirements

32–40 total semester hours required
Minimum 3.000 GPA required

Graduate Certificate Programs

The College of Science is pleased to offer several graduate certificate programs for working professionals as well as post-baccalaureate students who want to build their knowledge in growing fields. Graduate certificates are offered in in Biotechnology, Bioinformatics, and Nanomedicine. These programs are ideal for people already in the field who want to enhance their career, or people who are looking to make a change.

- **Graduate Certificate in Bioinformatics:** This certificate program offers professionals working in the research, healthcare, and pharmaceutical industries the ability to employ bioinformatics algorithms and techniques to biological problems in their current practice.
- **Graduate Certificate in Biotechnology:** Designed in response to a need in the biotechnology industry for individuals without a biotechnology background to obtain a strong foundation in basic biotechnology concepts and skills.
- **Graduate Certificate in Experimental Biotechnology:** Learn the necessary skills used in biotherapeutic development through lab courses and traditional classroom learning.
- **Graduate Certificate in Molecular Biotechnology:** Become more knowledgeable about state-of-the-art molecular biology techniques and advanced protein structure analysis. Students will learn to generate and optimize molecular forms used to express recombinant proteins to be used as biopharmaceuticals.
- **Graduate Certificate in Process Sciences:** Students will learn the sciences of interactions of the biological molecules in the process conditions and the relevant process technology, such as, freeze drying, needed for drug product manufacturing.
- **Graduate Certificate in Biopharmaceutical Analytical Sciences:** In this certificate program students will learn the principles and practices of state-of-the-art analyses of protein structures with focus on the characterization and quantification of proteins and variant derivatives.
- **Graduate Certificate in Pharmaceutical Technologies:** The focus of this certificate is on the conversion of purified proteins to biopharmaceutical drug products that are compatible for clinical use.
- **Graduate Certificate in Regulatory Science:** Designed in response to a need in the biotechnology industry for individuals, in particular regulators, to obtain a strong foundation in the science behind good regulatory practice today, specifically in relation to biopharmaceuticals.
- **Graduate Certificate in Biotechnology Enterprise:** Students will learn the fundamental concepts of leadership, entrepreneurship and innovation, financial decision making and marketing.
- **Graduate Certificate in Nanomedicine:** This certificate is designed for scientists, engineers, and physicians to develop competency and practical skills in the application of nanotechnology to problems in medicine.

Program Requirements**Biology**

- Bioinformatics (p. 378)

Chemistry and Chemical Biology

- Biopharmaceutical Analytical Sciences (p. 293)
- Biotechnology (p. 383)
- Biotechnology Enterprise (p. 383)

- Experimental Biotechnology (p. 384)
- Molecular Biotechnology (p. 384)
- Pharmaceutical Technologies (p. 384)
- Process Science (p. 384)
- Regulatory Science (p. 385)

Physics

- Nanomedicine (p. 404)

College of Social Sciences and Humanities

Graduate Admissions and Student Services (<http://www.northeastern.edu/cssh/graduate/programs>)

Uta G. Poiger, PhD, Dean

Natasha A. Frost, PhD, Associate Dean, Graduate Studies

Amy Killeen, MEd, Director, Graduate Admissions and Student Services

Sheila Magee Beare, MSCJ, Associate Director, Graduate Admissions and Student Services

Amber Crowe Connolly, MS, Administrative Coordinator, Graduate Admissions and Student Services

180 Renaissance Park
617.373.5990
617.373.7281 (fax)
gradcssh@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

Our Mission

The departments and programs of the College of Social Sciences and Humanities (CSSH)—with disciplines ranging from economics and history to English and international affairs, just to name a few—form an interdisciplinary collaborative of scholars with global perspectives. The CSSH mission is:

- To contribute to the liberal arts education of all Northeastern students
- To produce cutting-edge knowledge about and solutions to the political and social problems of our contemporary world
- To foster ethical reasoning and critical thought, with attention to the enduring significance of history, literature, and culture

This mission, along with a strong international focus, gives CSSH a central role in fulfilling Northeastern's ambition of educating global citizens.

Graduate Programs in the College of Social Sciences and Humanities

Graduate education at Northeastern integrates the highest level of scholarship across disciplinary boundaries with significant research and experiential learning opportunities. This multidimensional learning environment offers students an opportunity to develop critical thinking and creative problem-solving skills while introducing them to new perspectives in their fields. CSSH offers 13 master's programs, 7 doctoral programs, and 9 graduate certificate programs. Some courses and degree programs are offered in an online or hybrid format that is well suited for distance learners. Graduate programs in CSSH provide fertile ground and resources for advanced study and research. CSSH faculty members' cutting-edge interdisciplinary work inspires the development of new programs, research fellowship opportunities, and mentoring relationships.

All CSSH master's programs offer an optional cooperative education experience (co-op) to eligible students. Cooperative education is central to both the Northeastern experience and to the CSSH experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across

the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential Integration course.

Our doctoral, master's, and professional degree programs produce graduates who are well prepared for the diverse demands of careers in academia, industry, and the professions. Please visit the College of Social Sciences and Humanities (<http://www.northeastern.edu/cssh/graduate>) website for additional information, including latest news and upcoming events.

School of Criminology and Criminal Justice

Website (<http://www.northeastern.edu/cssh/sccj>)

Anthony Braga, PhD

Distinguished Professor and Director

Amy Farrell, PhD

Associate Professor and Associate Director

Gregory Zimmerman, PhD

Associate Professor and Graduate Program Director

204 Churchill Hall
617.373.3327
617.373.8723 (fax)
sccj@northeastern.edu

Graduate Programs Contact

Jennifer Smith, Graduate Program Administrator,
jenn.smith@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The School of Criminology and Criminal Justice at Northeastern University seeks to prepare students for professional and research careers in criminal justice, criminology, and related fields by applying multidisciplinary and comparative social science to understand, predict, and explain crime and contribute to the development of public policy within urban communities. Using an active-learning approach, the school seeks to develop its students intellectually and ethically, while providing them with a keen appreciation for the complexities of crime and public and private efforts to make communities safer and to ensure justice. The school offers a Master of Science degree in criminology and criminal justice and a PhD degree in criminology and justice policy. In addition, the school offers a JD/MS in criminology and criminal justice program and a JD/PhD in criminology and justice policy in conjunction with the School of Law.

Programs

Doctor of Philosophy (PhD)

- Criminology and Justice Policy (p. 413)
- Criminology and Justice Policy—Advanced Entry (p. 413)

Master of Science (MS)

- Criminology and Criminal Justice (p. 414)

Dual Degrees

- Law, Criminology and Justice Policy, JD/PhD (p. 415)
- Law, Criminology and Justice Policy, JD/PhD—Advanced Entry (p. 416)
- Law and Criminal Justice, JD/MS (p. 417)

Criminology and Justice Policy, PhD

The doctoral program in criminology and justice policy at the School of Criminology and Criminal Justice at Northeastern University seeks to prepare students for professional and research careers in criminal justice, criminology, and related fields by applying multidisciplinary and comparative social science to understand, predict, and explain crime and contribute to the development of public policy within urban communities. Using an active-learning approach, the school seeks to develop its students intellectually and ethically, while providing them with a keen appreciation for the complexities of crime and public and private efforts to make communities safer and to ensure justice.

The program is full time and is small and student centered. Students may enter the program with either a bachelor's degree or a master's degree. It is expected that students will be able to complete the program in four to five years, and students entering with a master's degree will be able to complete the program in three to five years.

Year one in the doctoral program offers students an opportunity to obtain a broad foundational knowledge in the discipline: two semesters of criminological theory, two semesters of statistics, one semester of criminal justice process, and one semester of advanced research methods. To ensure that all students have mastered the foundational material emphasized across the required courses for the PhD program and can successfully integrate theory, research, and policy, all PhD students take a "foundations" qualifying examination at the end of their first year in the doctoral program.

After demonstrating mastery of the foundational knowledge in year one, students devote themselves to a more specific area of research in year two. Students demonstrate this commitment through a second qualifying examination, which consists of two stages: an area exam and a publishable paper. The two stages of this exam are required and should be related.

Following successful completion of the first and second qualifying examinations, and required and elective course work (totaling 54 semester hours), the students proceed to a formal dissertation proposal defense.

Doctoral Degree Candidacy

A student achieves candidacy when he or she has successfully completed all course work (54 semester hours for students entering with a bachelor's degree), passed both the foundations qualifying examination and the area qualifying examination, and deposited the final version of their dissertation proposal (approved by their full committee) with the school's graduate program office. Candidacy is certified, in writing, by the college.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations—foundations exam and area exam/
publishable paper
Annual review
PhD candidacy
Dissertation proposal
Dissertation defense

Core Requirements

A cumulative 3.000 GPA is required for the core requirements.

Code	Title	Hours
Criminal Justice Process		
CRIM 7202	The Criminal Justice Process	4
Policy		
CRIM 7710	Criminology and Public Policy 1	4
CRIM 7711	Criminology and Public Policy 2	4
Analysis & Methods		
CRIM 7713	Advanced Research and Evaluation Methods	4
CRIM 7715	Multivariate Analysis 1	4
CRIM 7716	Multivariate Analysis 2	4
Practicum		
CRIM 7706	Practicum in Writing and Publishing	2

Electives

Code	Title	Hours
Complete 28 semester hours in the following range:		28
CRIM 7200 to CRIM 7989		

Dissertation

Code	Title	Hours
Exam Preparation		
CRIM 8960	Exam Preparation—Doctoral	
Dissertation		
Complete the following (repeatable) course twice:		
CRIM 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of CRIM 9990, registration in the following class is required in each semester (including the summer if the dissertation is submitted in summer) until the dissertation is completed:		
CRIM 9996	Dissertation Continuation	

Program Credit/GPA Requirements

54 total semester hours required
Minimum 3.000 GPA required

Criminology and Justice Policy, PhD—Advanced Entry

The doctoral program in criminology and justice policy at the School of Criminology and Criminal Justice at Northeastern University seeks to prepare students for professional and research careers in criminal justice, criminology, and related fields by applying multidisciplinary and comparative social science to understand, predict, and explain crime and contribute to the development of public policy within urban communities. Using an active-learning approach, the school seeks to develop its students intellectually and ethically, while providing them with a keen

appreciation for the complexities of crime and public and private efforts to make communities safer and to ensure justice.

The program is full time and is small and student centered. Students may enter the program with either a bachelor's degree or a master's degree. It is expected that students entering will be able to complete the program in three to five years.

Year one in the doctoral program offers students an opportunity to obtain a broad foundational knowledge in the discipline: two semesters of criminological theory, two semesters of statistics, and one semester of advanced research methods. To ensure that all students have mastered the foundational material emphasized across the required courses for the PhD program and can successfully integrate theory, research, and policy, all PhD students take a "foundations" qualifying examination at the end of their first year in the doctoral program.

After demonstrating mastery of the foundational knowledge in year one, students devote themselves to a more specific area of research in year two. Students demonstrate this commitment through a second qualifying examination, which consists of two stages: an area exam and a publishable paper. The two stages of this exam are required and should be related.

Following successful completion of the first and second qualifying examinations, and required and elective course work (totaling 42 semester hours), the students proceed to a formal dissertation proposal defense.

Doctoral Degree Candidacy

A student achieves candidacy when he or she has successfully completed all course work (42 semester hours for students with advanced standing), passed the foundations qualifying examination, the area qualifying examination, and deposited the final version of their dissertation proposal (approved by their full committee) with the school's graduate program office. Candidacy is certified, in writing, by the college.

Program Requirements

Advanced Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations—foundations exam and area exam/
publishable paper
Annual review
Dissertation proposal
Dissertation defense

Core Requirements

A cumulative 3.000 GPA is required for the core requirement.

Code	Title	Hours
Criminal Justice Process		
CRIM 7202	The Criminal Justice Process	4
Policy		
CRIM 7710	Criminology and Public Policy 1	4
CRIM 7711	Criminology and Public Policy 2	4
Analysis & Methods		
CRIM 7713	Advanced Research and Evaluation Methods	4
CRIM 7715	Multivariate Analysis 1	4
CRIM 7716	Multivariate Analysis 2	4

Practicum		
CRIM 7706	Practicum in Writing and Publishing	2

Electives

Code	Title	Hours
Complete 16 semester hours in the following range:		
CRIM 7200 to CRIM 7989		

Dissertation

Code	Title	Hours
Dissertation		
Complete the following (repeatable) course twice:		
CRIM 9990	Dissertation	

Dissertation Continuation

Following completion of two semesters of CRIM 9990, registration in the following class is required in each semester (including the summer if the dissertation is submitted in summer) until the dissertation is completed:

CRIM 9996	Dissertation Continuation
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Program Credit/GPA Requirements

42 total semester hours required
Minimum 3.000 GPA required

Criminology and Criminal Justice, MS

The master's program in criminology and criminal justice at Northeastern University concentrates both on the problem of crime as a form of deviant behavior and on the criminal justice and private security systems that deal with it. The program emphasizes a systems approach to criminal justice, stressing policy development and analysis, as well as the impact these policies have on the individuals and organizations charged with delivering justice in a fair and equitable manner. In concept and scope, the MS degree encompasses such related disciplines as law, sociology, political science, psychology, criminology, and public administration.

The master's program is comprised of required courses encompassing both substantive and technical skills. Additionally, students choose elective courses from offerings within the graduate program in criminal justice or in other graduate programs in the College of Social Sciences and Humanities. The course offerings afford students the flexibility to customize their own programs, which may include an internship, directed study, or master's thesis.

Faculty members in the graduate program represent several different academic disciplines, and teaching activities vary in nature depending on the instructors' specific objectives. The faculty's specialized interests help make possible a broad range of program offerings, including courses on the criminal justice process, victimology, security management, criminal law, juvenile justice, law and psychology, and terrorism.

The master's program offers an optional cooperative education experience ("co-op") to eligible students. Students extend the two-semester program to 18 months through a co-op work experience and its associated two-credit experiential integration course. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with 6-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United

States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Briefly stated, the graduate program endeavors to:

- Assist in developing criminal justice and private security leaders capable of assuming responsibility for policy planning and administration
- Offer students an opportunity to acquire the necessary skills and knowledge to conduct applied research while assisting them in developing the ability to apply this research in a variety of criminal justice settings
- Provide an opportunity for a solid educational foundation for those who wish to pursue more advanced graduate study beyond the Master of Science degree

Graduate study in criminology and criminal justice may be pursued on either a full- or part-time basis. All candidates for the Master of Science in Criminology and Criminal Justice degree must successfully complete a minimum of 32 semester hours of credit in course work.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative 3.000 GPA is required for the core requirement.

Code	Title	Hours
Required Core		
CRIM 7200	Criminology	4
CRIM 7202	The Criminal Justice Process	4
Research & Statistics		
INSH 6300	Research Methods in the Social Sciences	4
INSH 6500 or INSH 6404	Statistical Analysis Computational Social Science	4

Electives

Code	Title	Hours
Complete 16 semester hours in the following range:		16
CRIM 5000 to CRIM 7989		

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
CRIM 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

32 total semester hours required (34 with optional co-op)
Minimum 3.000 GPA required

Law, Criminology and Justice Policy, JD/PhD

The joint JD/PhD program will expand the knowledge base and career options of students. The disciplines of criminology and justice policy

and law share common interests in identifying opportunities to create conditions for justice, equality, and societal well-being. The joint degree will provide students with a comprehensive interdisciplinary understanding of what influences criminal justice problems and the sociopolitical, legal, and economic context in which they are found. Solving problems requires interdisciplinary knowledge and an analytical and practical skill set that includes interprofessional problem solving.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Two qualifying examinations—foundations exam and area exam/
publishable paper
- Annual review
- PhD candidacy
- Dissertation proposal
- Dissertation defense

Core Requirements

A cumulative 3.000 GPA is required for the core requirement.

Code	Title	Hours
Criminal Justice Process		
CRIM 7202	The Criminal Justice Process	4
Policy		
CRIM 7710	Criminology and Public Policy 1	4
CRIM 7711	Criminology and Public Policy 2	4
Analysis & Methods		
CRIM 7713	Advanced Research and Evaluation Methods	4
CRIM 7715	Multivariate Analysis 1	4
CRIM 7716	Multivariate Analysis 2	4
Practicum		
CRIM 7706	Practicum in Writing and Publishing	2

Electives

Code	Title	Hours
Complete 28 hours from the following:		28
CRIM 7201	Global Criminology	
CRIM 7208		
CRIM 7224		
CRIM 7232		
CRIM 7256		
CRIM 7314		
CRIM 7334		
LAW 6103	Criminal Justice	
LAW 7301	Advanced Criminal Procedure: Adjudication	
LAW 7332	Evidence	
LAW 7351	Prisoners' Rights Clinic	
LAW 7398	Federal Courts and the Federal System	
LAW 7410	Domestic Violence Clinic	
LAW 7495	Advanced Criminal Procedure: Investigation	

LAW 7526	Juvenile Courts: Delinquency, Abuse, Neglect
LAW 7528	Balancing Liberty and Security Seminar
LAW 7597	Civil Rights and Restorative Justice Clinic
LAW 7612	Wrongful Convictions and Post-Conviction Remedies
LAW 7619	Healthcare Fraud and Abuse Law
LAW 7647	Trial Practice

Dissertation

Code	Title	Hours
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Dissertation

Complete the following (repeatable) course twice:

CRIM 9990	Dissertation
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Dissertation Continuation

Following completion of two semesters of CRIM 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

CRIM 9996	Dissertation Continuation
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Program Credit/GPA Requirements

54 total semester hours required for PhD. Please contact the School of Law (<https://www.northeastern.edu/law/academics/jd/dual-degrees>) for JD requirements.

Minimum 3.000 GPA required for PhD

Law, Criminology and Justice Policy, JD/PhD—Advanced Entry

The joint JD/PhD program will expand the knowledge base and career options of students. The disciplines of criminology and justice policy and law share common interests in identifying opportunities to create conditions for justice, equality, and societal well-being. The joint degree will provide students with a comprehensive interdisciplinary understanding of what influences criminal justice problems and the sociopolitical, legal, and economic context in which they are found. Solving problems requires interdisciplinary knowledge and an analytical and practical skill set that includes interprofessional problem solving.

Program Requirements

Advanced Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations—foundations exam and area exam/
publishable paper
Annual review
PhD candidacy
Dissertation proposal
Dissertation defense

Core Requirements

A cumulative 3.000 GPA is required for the core requirement.

Code	Title	Hours
CRIM 7710	Criminology and Public Policy 1	4
CRIM 7711	Criminology and Public Policy 2	4

Analysis & Methods

CRIM 7713	Advanced Research and Evaluation Methods	4
CRIM 7715	Multivariate Analysis 1	4
CRIM 7716	Multivariate Analysis 2	4

Practicum

CRIM 7706	Practicum in Writing and Publishing	2
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Electives

Code	Title	Hours
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Complete 16 hours from the following:

		16
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CRIM 7201	Global Criminology
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CRIM 7208	
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CRIM 7224	
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CRIM 7232	
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CRIM 7256	
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CRIM 7314	
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CRIM 7334	
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LAW 6103	Criminal Justice
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LAW 7301	Advanced Criminal Procedure: Adjudication
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LAW 7332	Evidence
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LAW 7351	Prisoners' Rights Clinic
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LAW 7398	Federal Courts and the Federal System
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LAW 7410	Domestic Violence Clinic
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LAW 7495	Advanced Criminal Procedure: Investigation
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LAW 7526	Juvenile Courts: Delinquency, Abuse, Neglect
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LAW 7528	Balancing Liberty and Security Seminar
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LAW 7597	Civil Rights and Restorative Justice Clinic
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LAW 7612	Wrongful Convictions and Post-Conviction Remedies
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LAW 7619	Healthcare Fraud and Abuse Law
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LAW 7647	Trial Practice
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Dissertation

Code	Title	Hours
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Dissertation

Complete the following (repeatable) course twice:

CRIM 9990	Dissertation
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Dissertation Continuation

Following completion of two semesters of CRIM 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

CRIM 9996	Dissertation Continuation
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Program Credit/GPA Requirements

38 total semester hours required for PhD. Please contact the School of Law (<https://www.northeastern.edu/law/academics/jd/dual-degrees>) for JD requirements.

Minimum 3.000 GPA required for PhD

Law, Criminology and Criminal Justice, JD/MS

The joint JD/MS program will expand the knowledge base and career options of students. The disciplines of criminal justice and law share common interests in identifying opportunities to create the conditions for justice, social equality, and societal well-being. The joint degree is designed to provide students with a comprehensive interdisciplinary understanding of what influences criminal justice problems and the social, political, legal, economic context in which they are found. Solving these problems requires interdisciplinary knowledge and an analytical and practical skill set that includes interprofessional problem solving.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative 3.000 GPA is required for the core requirement.

Code	Title	Hours
Criminology and Criminal Justice		
CRIM 7200	Criminology	4
CRIM 7202	The Criminal Justice Process	4
Research and Statistics		
INSH 6300	Research Methods in the Social Sciences	4
INSH 6500 or INSH 6404	Statistical Analysis Computational Social Science	4

Electives

Code	Title	Hours
Complete 16 hours from the following:		16
CRIM 7201	Global Criminology	
CRIM 7208		
CRIM 7224		
CRIM 7232		
CRIM 7256		
CRIM 7314		
CRIM 7334		
LAW 6103	Criminal Justice	
LAW 7301	Advanced Criminal Procedure: Adjudication	
LAW 7332	Evidence	
LAW 7410	Domestic Violence Clinic	
LAW 7495	Advanced Criminal Procedure: Investigation	
LAW 7528	Balancing Liberty and Security Seminar	
LAW 7351	Prisoners' Rights Clinic	
LAW 7398	Federal Courts and the Federal System	
LAW 7526	Juvenile Courts: Delinquency, Abuse, Neglect	
LAW 7597	Civil Rights and Restorative Justice Clinic	
LAW 7612	Wrongful Convictions and Post-Conviction Remedies	
LAW 7619	Healthcare Fraud and Abuse Law	
LAW 7647	Trial Practice	

Program Credit/GPA Requirements

32 total semester hours required for MS. Please contact the School of Law (<https://www.northeastern.edu/law/academics/jd/dual-degrees>) for JD requirements.

Minimum 3.000 GPA required

Economics

Website (<http://www.northeastern.edu/cssh/economics>)

William T. Dickens, PhD

University Distinguished Professor and Chair

Gregory H. Wassall, PhD

Associate Professor and Graduate Program Director

301 Lake Hall
617.373.2871
617.373.3640 (fax)
gradecon@northeastern.edu

Graduate Programs Contact

Jacquetta Hester, Graduate Program Administrator,
j.hester@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The Department of Economics offers both a MA and a PhD program. The most distinctive feature of these programs is their emphasis on applied economics, coupled with attention to providing a solid grounding in microeconomic and macroeconomic theory, and econometrics. Students come from all over the world, and the curriculum is designed with this in mind, striving for balance in coverage of economies that are rich and poor, large and small, mixed and market. This gives a unique flavor to the course of study, making it well-suited to the analysis of the emerging global economy of the twenty-first century.

The Master of Arts program is in applied economic policy analysis, with broad specialization areas. The program is large enough to support a full slate of core and area courses each year, yet small enough to maintain a sense of community among the students. The program is especially appropriate for those who wish to work in or return to positions in government, teaching, finance, or industry, while providing a rigorous basis for those who want to continue their studies to the doctoral level.

Our world-famous co-op system offers qualified MA students the opportunity to apply for paid work positions as practicing economists for up to six months as part of their academic program. We feel that this paid work experience enhances our MA degree and its emphasis on application. Students have an opportunity to learn how to apply their knowledge, to solve problems, and to make a difference in the world before they graduate. Our graduates either find full-time work in their area of specialty or go on to earn additional graduate degrees. All of our graduates find jobs after completing our program.

The PhD program is small and focused, and we welcome applications from those with a bachelor's or master's degree who have had prior training in macroeconomic and microeconomic theory and possess strong quantitative skills. Students take course work in **industrial organization, competition policy, and regulatory** and **labor economics**.

Programs

Doctor of Philosophy (PhD)

- Economics (p. 418)
- Economics—Advanced Entry (p. 419)

Master of Arts (MA)

- Economics (p. 421)

Economics, PhD

The PhD program in economics is small and focused, specializing in *industrial organization, competition policy, and regulatory economics* and *labor economics*.

Requirements

Students entering the doctoral program with a Master's degree in economics, please see **Economics PhD—Advanced Entry** (p. 419).

COURSE WORK

Students entering the doctoral program with a bachelor's degree will take four master's-level core classes (16 semester hours), three doctoral-level core classes (12 semester hours), two classes in each of two doctoral fields (16 semester hours), and one elective (4 semester hours), for a total program requirement of 48 semester hours. Core courses at the master's and doctoral level are focused on developing an advanced theoretical and quantitative foundation (Macroeconomic Theory, Microeconomic Theory, and Applied Econometrics). The remainder of the course work is focused on the sophisticated application of analytical tools in the chosen field of concentration.

PhD students are expected to take three classes per semester as necessary to meet the degree's course work requirements in the minimum number of semesters.

EXAMINATIONS

Two Qualifying Examinations—Macroeconomics and Microeconomics

Qualifying examinations are required upon completion of Macroeconomics 2 and Microeconomics 2. Students must receive a minimum grade of B– in the associated theory class to sit for its exam. Students are given a maximum of two attempts to pass each exam to continue in the program. Failure to sit for an exam at the appropriate time without prior consent of the graduate program director will result in an automatic fail on that exam.

One Field Comprehensive Examination

A field examination is required upon completion of the associate field classes. Students will complete course work in two fields but are required to take a field examination in one field of their choosing. Students must receive a minimum grade of B– in the associated field classes in order to sit for that field's exam. The field examination includes questions from the chosen field, as well as questions on econometrics methodology. Students are given a maximum of two attempts to pass the exam to continue in the program. Failure to sit for an exam at the appropriate time without prior consent of the graduate program director will result in an automatic fail on that exam.

DOCTORAL DEGREE CANDIDACY

Following completion of required course work and examinations, students are certified as doctoral degree candidates (ABD). A degree candidate has a maximum of five years to defend and submit an acceptable doctoral dissertation.

DISSERTATION

The department expects that a doctoral candidate's **dissertation committee** will be formed and the dissertation proposal presented within six months of reaching degree candidacy. A dissertation committee includes a principal advisor and a minimum of two other members. The principal advisor must be a member of the economics department who holds a PhD degree and who is qualified in the chosen field. Other committee members must be qualified in the chosen field or econometrics, and one member may be from outside the department. Committee compositions must be approved by the graduate program director and department chair.

A **dissertation proposal** states the question or hypothesis, reviews the relevant literature, and explains how the proposed work will contribute to that literature and general understanding. The proposal sets forth data sources, models, and econometric issues in sufficient detail so that any faculty member not in the field will be able to assess its merits. Normally, the proposal should not exceed twenty double-spaced pages. The proposal is first approved by the dissertation committee and then presented at an open seminar.

WRITING THE DOCTORAL DISSERTATION

Writing the dissertation entails working with the principal advisor and other committee members until it is determined that a dissertation is complete, and the candidate is ready to present and defend the work at an open seminar. Candidates must arrange a date and time for the defense at least three weeks in advance. Students must familiarize themselves with the Guide to the Preparation of Theses and Dissertations (<https://www.northeastern.edu/cssh/graduate/commencement/formatting-guidelines>). The guide provides links to formatting tips, sample introductory pages, sample approval record, and deadlines. In addition, a checklist is provided to ensure students have fulfilled the required steps in the commencement clearance process.

Milestones

Maintaining satisfactory academic progress during doctoral candidacy requires the following:

PhD Annual Student Progress Review

Each PhD student will have an annual review of his or her progress toward the degree. Receipt of financial support administered by the graduate school is contingent upon satisfactory academic progress toward the degree and satisfactory performance in assigned duties. See the CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students) for further details.

Field Lunch Participation

All PhD students registered for Doctoral Dissertation or Continuation who are in residence are expected to regularly attend a field seminar in industrial organization or labor. These seminars meet roughly every week, and their purpose is to assist students in choosing and evaluating dissertation topics as well as advancing and completing their dissertation. All doctoral candidates will be expected to present their research at various stages of writing their dissertation.

Seminar Series Participation

All PhD students registered for Doctoral Dissertation or Continuation who are in residence are expected to regularly attend academic seminars by speakers invited to campus through the Department of Economics Seminar Series. Participation in these seminars is an important component of doctoral training and is intended to expose students to current research in their field while helping to develop and hone their own presentation skills.

Practical Experience in Applied Economics Program

Participation in at least one semester of the Practical Experience in Applied Economics program is required of all students who have reached doctoral candidacy. The program is offered in the spring semester every other year. In this program, a variety of prominent practitioners working in consulting and government agencies in the fields of industrial organization and labor will describe their practical experience applying economics to a variety of consulting and policy problems, including antitrust, regulation, labor market policy, education, and health policy. This is a participatory class that will require advanced reading and preparation of questions for the practitioners in addition to other assignments.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations—microeconomics and macroeconomics
 Field comprehensive examination (student chooses field)
 Doctoral degree candidacy
 PhD annual student progress review
 Dissertation committee
 Dissertation proposal
 Dissertation defense
 Field lunch participation
 Seminar series participation

Core Requirements

Code	Title	Hours
Quantitative		
ECON 5105	Math and Statistics for Economists	4
ECON 5140	Applied Econometrics	4
ECON 7740	Applied Econometrics 2	4
Theory		
ECON 5110	Microeconomic Theory	4
ECON 5120	Macroeconomic Theory	4
ECON 7710	Microeconomic Theory 2	4
ECON 7720	Macroeconomic Theory 2	4
Field		
<i>Labor Economics Field</i>		
ECON 7763	Labor Market Analysis	4
ECON 7764	Topics in Labor Economics	4
<i>Industrial Organization Field</i>		
ECON 7771	Framework of Industrial Organization	4
ECON 7772	Public Policy Toward Business	4

Elective

Code	Title	Hours
Complete 4 semester hours from the following:		
ECON 5200 to ECON 5299		4
ECON 7200 to ECON 7299		
ECON 7976	Directed Study	

Dissertation

Code	Title	Hours
Registration in the following class is required in the semester prior to sitting for the field examination:		
ECON 8960	Exam Preparation—Doctoral	

Registration in the following class is required in the semester that students sit for the field examination and begin dissertation planning:

ECON 9986	Research
Registration in the following class is required in the fall and spring semesters following achievement of doctoral candidacy:	
ECON 9990	Dissertation
Following completion of two semesters of ECON 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:	
ECON 9996	Dissertation Continuation

Program Credit/GPA Requirements

48 total semester hours required
 Minimum 3.000 GPA required

Economics, PhD—Advanced Entry

The PhD program in applied economics is small and focused, specializing in *industrial organization, competition policy, and regulatory economics* and *labor economics*.

Requirements

Students entering the doctoral program without a master's degree, please see **Economics PhD** (p. 418).

COURSE WORK

Students entering the doctoral program with a master's degree will take three doctoral-level core classes (12 semester hours), two classes in each of two doctoral fields (16 semester hours), and one elective (4 semester hours), for a total program requirement of 32 semester hours. If the master's degree is not in economics, additional course work may be required in order to meet course prerequisites. Core courses are focused on developing an advanced theoretical and quantitative foundation (macroeconomic theory, microeconomic theory, and applied econometrics). The remainder of the course work is focused on the sophisticated application of analytical tools in the chosen field of concentration.

PhD students are expected to take three classes per semester as necessary to meet the degree's course work requirements in the minimum number of semesters.

EXAMINATIONS

Two Qualifying Examinations—Macroeconomics and Microeconomics

Qualifying examinations are required upon completion of Macroeconomics 2 and Microeconomics 2. Students must receive a minimum grade of B– in the associated theory class to sit for its exam. Students are given a maximum of two attempts to pass each exam to continue in the program. Failure to sit for an exam at the appropriate time without prior consent of the graduate program director will result in an automatic fail on that exam.

One Field Comprehensive Examination

A field examination is required upon completion of the associate field classes. Students will complete course work in two fields but are required to take a field examination in one field of their choosing. Students must receive a minimum grade of B– in the associated field classes in order to sit for that field's exam. The field examination includes questions from the chosen field, as well as questions on econometrics methodology.

Students are given a maximum of two attempts to pass the exam to continue in the program. Failure to sit for an exam at the appropriate time without prior consent of the graduate program director will result in an automatic fail on that exam.

DOCTORAL DEGREE CANDIDACY

Following completion of required course work and examinations, students are certified as doctoral degree candidates (ABD). A degree candidate has a maximum of five years to defend and submit an acceptable doctoral dissertation.

DISSERTATION COMMITTEE AND PROPOSAL

The department expects that a doctoral candidate's dissertation committee will be formed and the dissertation proposal presented within six months of reaching degree candidacy.

A **dissertation committee** includes a principal advisor and a minimum of two other members. The principal advisor must be a current member of the economics department who holds a PhD degree and who is qualified in the chosen field. Other committee members must be qualified in the chosen field or econometrics, and one member may be from outside the department. Committee compositions must be approved by the graduate program director and department chair.

A **dissertation proposal** states the question or hypothesis, reviews the relevant literature, and explains how the proposed work will contribute to that literature and general understanding. The proposal sets forth data sources, models, and econometric issues in sufficient detail so that any faculty member not in the field will be able to assess its merits. Normally, the proposal should not exceed twenty double-spaced pages. The proposal is first approved by the dissertation committee and then presented at an open seminar.

WRITING THE DOCTORAL DISSERTATION

Writing the dissertation entails working with the principal advisor and other committee members until it is determined that a dissertation is complete, and the candidate is ready to present and defend the work at an open seminar. Candidates must arrange a date and time for the defense at least three weeks in advance. Students must familiarize themselves with the Guide to the Preparation of Theses and Dissertations (<https://www.northeastern.edu/cssh/graduate/commencement/formatting-guidelines>). The guide provides links to formatting tips, sample introductory pages, sample approval record, and deadlines. In addition, a checklist is provided to ensure students have fulfilled the required steps in the commencement clearance process.

Milestones

Maintaining satisfactory academic progress during doctoral candidacy requires the following:

PhD Annual Student Progress Review

Each PhD student will have an annual review of his or her progress toward the degree. Receipt of financial support administered by the college is contingent upon satisfactory academic progress toward the degree and satisfactory performance in assigned duties. See the College of Social Sciences and Humanities Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students) for further details.

Field Lunch Participation

All PhD students registered for Doctoral Dissertation or Continuation who are in residence are expected to regularly attend a field seminar in industrial organization or labor. These seminars meet roughly every week, and their purpose is to assist students in choosing and evaluating dissertation topics as well as advancing and completing their

dissertation. All doctoral candidates will be expected to present their research at various stages of writing their dissertation.

Seminar Series Participation

All PhD students registered for Doctoral Dissertation or Continuation who are in residence are expected to regularly attend academic seminars by speakers invited to campus through the Department of Economics Seminar Series. Participation in these seminars is an important component of doctoral training and is intended to expose students to current research in their field while helping to develop and hone their own presentation skills.

Practical Experience in Applied Economics Program

Participation in at least one semester of the Practical Experience in Applied Economics program is required of all students who have reached doctoral candidacy. The program is offered in the spring semester every other year. In this program, a variety of prominent practitioners working in consulting and government agencies in the fields of industrial organization and labor will describe their practical experience applying economics to a variety of consulting and policy problems, including antitrust, regulation, labor market policy, education, and health policy. This is a participatory class that will require advanced reading and preparation of questions for the practitioners in addition to other assignments.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Two qualifying examinations—microeconomics and macroeconomics
Field comprehensive examination (student chooses field)
Doctoral degree candidacy
PhD annual student progress review
Dissertation committee
Dissertation proposal
Dissertation defense
Field lunch participation
Seminar series participation

Core Requirements

Code	Title	Hours
Quantitative		
ECON 7740	Applied Econometrics 2	4
Theory		
ECON 7710	Microeconomic Theory 2	4
ECON 7720	Macroeconomic Theory 2	4
Field		
<i>Labor Economics Field</i>		
ECON 7763	Labor Market Analysis	4
ECON 7764	Topics in Labor Economics	4
<i>Industrial Organization Field</i>		
ECON 7771	Framework of Industrial Organization	4
ECON 7772	Public Policy Toward Business	4

Elective

Code	Title	Hours
Complete 4 semester hours from the following:		4
ECON 7200 to ECON 7299		
ECON 7976	Directed Study	

Dissertation

Code	Title	Hours
Registration in the following class is required in the semester prior to sitting for the field examination:		
ECON 8960	Exam Preparation—Doctoral	
Registration in the following class is required in the semester that students sit for the field examination and begin dissertation planning:		
ECON 9986	Research	
Registration in the following class is required in the fall and spring semesters following achievement of doctoral candidacy:		
ECON 9990	Dissertation	
Following completion of two semesters of ECON 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:		
ECON 9996	Dissertation Continuation	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Economics, MA

The Master of Arts program focuses on applied economic policy analysis, with broad specialization areas. The program is large enough to support a full slate of core and area courses each year, yet small enough to maintain a sense of community among the students. The program is especially appropriate for those who wish to work in or return to positions in government, teaching, finance, or industry, while providing a rigorous basis for those who want to continue their studies to the doctoral level.

We offer the opportunity for master's students to apply for paid work positions through Northeastern's world-famous co-op program. Qualified and approved master's students can participate in co-op as practicing economists for up to six months as part of their academic program (note that a 3.500 QPA is required in order to apply). This paid work experience enhances the degree and its emphasis on application. Students have an opportunity to learn how to apply their knowledge, to solve problems, and to make a difference in the world before they graduate. Our graduates either find full-time work in their area of specialty or go on to earn additional graduate degrees. All of our graduates find jobs after completing our program. For more information, please visit economics co-op (<https://www.northeastern.edu/cssh/economics/undergraduate/experiential-learning/co-op>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Quantitative		
ECON 5105	Math and Statistics for Economists	4

ECON 5140	Applied Econometrics	4
Theory		
ECON 5110	Microeconomic Theory	4
ECON 5120	Macroeconomic Theory	4

Electives

With prior approval from the graduate program director, the following courses may substitute for electives: Thesis (ECON 7990) or Internship In Economics (ECON 8550). Additionally, a student may select a maximum of four graduate semester hours offered by other departments.

Code	Title	Hours
Complete 16 semester hours in the following range:		16
ECON 5200 to ECON 7772		

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
ECON 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

32 semester hours required (34 with optional co-op)
Minimum 3.000 GPA required

English

Website (<http://www.northeastern.edu/cssh/english/graduate>)

Elizabeth Maddock Dillon, PhD

Professor and Chair
e.dillon@northeastern.edu

Ryan Cordell, PhD

Assistant Professor and Graduate Program Director
r.cordell@northeastern.edu

405 Lake Hall
617.373.3692
617.373.2509 (fax)
gradenglish@northeastern.edu

Graduate Programs Contact
Melissa Daigle, Graduate Program Administrator,
m.daigle@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The graduate program in English is grounded in the study of British and American literature through the most current modes of humanistic inquiry and in the disciplines of writing and rhetoric. Both in course work and through the NULab for Texts, Maps, and Networks (<http://www.northeastern.edu/nulab>), the graduate program in English also offers training in the digital humanities. Altogether, our degree programs provide a challenging, flexible, and wide-ranging education in English studies today.

Programs

Doctor of Philosophy (PhD)

- English (p. 422)
- English—Advanced Entry (p. 423)

Master of Arts (MA)

- English (p. 424)

Graduate Certificate

- Digital Humanities (p. 425)

English, PhD

The PhD program seeks to train students to be productive scholars and teachers in the fields of both literary studies and rhetoric and composition. In course work, students read and analyze the important texts, current issues, and critical methodologies of the discipline. Drawing on the breadth of this preparation, students demonstrate their ability to recognize and produce scholarly arguments in designing the three comprehensive field papers in areas of scholarly interest and competence corresponding to recognized and emerging fields of study. Finally, the dissertation offers students an opportunity to design a focused research project in consultation with a dissertation advisor. Throughout the program, faculty works closely with doctoral students to develop their scholarly and professional identities in preparation for careers in academia.

Academic Standing/Progress

To be considered in good academic standing, PhD students must be making progress toward their degree requirements, including maintaining a 3.500 minimum cumulative grade-point average (GPA) and completing the comprehensive examination within one year of finishing course work.

Doctoral Degree Candidacy

Students entering with a relevant BA must complete 48 semester hours, complete the language requirement, and pass the comprehensive examination.

General Regulations

Program requirements are described in the CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students) and the Graduate Program in English PhD Guide (<https://www.northeastern.edu/cssh/english/graduate/current-student-resources>). Both documents are updated annually.

Program Requirements

Bachelor's Degree Entrance

Milestones

- Annual progress review
- Two languages
- Comprehensive exam
- Doctoral degree candidacy
- Dissertation prospectus
- Public prospectus/dissertation work-in-progress presentation
- Dissertation defense

Core Requirements

Code	Title	Hours
Proseminar		
ENGL 5103	Proseminar	4
Writing and the Teaching of Writing		
ENGL 7392	Writing and the Teaching of Writing	4
Theories and Methods		
Complete 4 semester hours from the following:		4
ENGL 7342	Topics in Criticism	
ENGL 7351	Topics in Literary Study (selected topics only)	
ENGL 7358	Topics in Literature and other Disciplines (selected topics only)	
ENGL 7370	Topics in Digital Humanities	
WMNS 6100	Theorizing Gender and Sexuality	
WMNS 7976	Directed Study (GCWS Consortium, selected topics only)	
Writing and Rhetoric		
Complete 4 semester hours from the following:		4
ENGL 7111		
ENGL 7112		
ENGL 7121		
ENGL 7360	Topics in Rhetoric	
ENGL 7391		
ENGL 7393		
ENGL 7395	Topics in Writing	
ENGL 7396		
ENGL 7397		
ENGL 7398		
Literary Periods		
<i>Literature Pre-1700</i>		
Complete 4 semester hours from the following:		4
ENGL 7213	Topics in Early American Literature	
ENGL 7261		
ENGL 7262		
ENGL 7263		
ENGL 7271		
ENGL 7274		
ENGL 7281	Topics in Medieval Literature	
ENGL 7282	Topics in Renaissance Literature	
ENGL 7283	Topics in 17th-Century Literature	
ENGL 7342	Topics in Criticism (selected topics only)	
ENGL 7358	Topics in Literature and other Disciplines (selected topics only)	
<i>Literature 1700–1900</i>		
Complete 4 semester hours from the following:		4
ENGL 7212		
ENGL 7214	Topics in 19th-Century American Literature	
ENGL 7233		
ENGL 7264		
ENGL 7266		
ENGL 7275		

ENGL 7284	Topics in 18th-Century Literature
ENGL 7285	
ENGL 7286	
ENGL 7291	
ENGL 7351	Topics in Literary Study (selected topics only)
ENGL 7352	(selected topics only)
<i>Literature Post-1900</i>	
Complete 4 semester hours from the following: 4	
ENGL 7211	
ENGL 7215	Topics in 20th-Century American Literature
ENGL 7244	African-American Novel
ENGL 7251	
ENGL 7287	
ENGL 7351	Topics in Literary Study (selected topics only)
ENGL 7355	(selected topics only)
ENGL 7358	Topics in Literature and other Disciplines (selected topics only)
ENGL 7359	(selected topics only)
ENGL 7361	
ENGL 7362	

Electives

Code	Title	Hours
Complete 20 semester hours of ENGL courses.		20

Dissertation

Code	Title	Hours
Exam Preparation		
ENGL 8960	Exam Preparation—Doctoral (Only needed for PhD students who have completed coursework but have yet to complete the comprehensive exams. Not repeatable.)	

Research

ENGL 9986	Research	
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Dissertation

Complete the following (repeatable) course twice:	
ENGL 9990	Dissertation

Dissertation Continuation

Following completion of two semesters of ENGL 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

ENGL 9996	Dissertation Continuation	
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Program Credit/GPA Requirements

48 total semester hours required
 Minimum 3.500 GPA required

English, PhD—Advanced Entry

The PhD program seeks to train students to be productive scholars and teachers in the fields of both literary studies and rhetoric and composition. In course work, students read and analyze the important texts, current issues, and critical methodologies of the discipline. Drawing

on the breadth of this preparation, students demonstrate their ability to recognize and produce scholarly arguments in designing the three comprehensive field papers in areas of scholarly interest and competence corresponding to recognized and emerging fields of study. Finally, the dissertation offers students an opportunity to design a focused research project in consultation with a dissertation advisor. Throughout the program, faculty works closely with doctoral students to develop their scholarly and professional identities in preparation for careers in academia.

Academic Standing/Progress

To be considered in good academic standing, PhD students must be making progress toward their degree requirements, including maintaining a 3.500 minimum cumulative grade-point average (GPA) and completing the comprehensive examination within one year of finishing course work.

Doctoral Degree Candidacy

Students entering with a relevant MA must complete 24 semester hours, complete the language requirement, and pass the comprehensive examination.

General Regulations

Program requirements are described in the CSSH Graduate Programs General Regulations and the Graduate Program in English PhD Guide. Both documents are updated annually.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Annual progress review
- Two languages
- Comprehensive exam
- Doctoral degree candidacy
- Dissertation prospectus
- Public prospectus/dissertation work-in-progress presentation
- Dissertation defense

Core Requirements

Code	Title	Hours
Proseminar		
ENGL 5103	Proseminar	4
Writing and the Teaching of Writing		
ENGL 7392	Writing and the Teaching of Writing	4

Electives

Code	Title	Hours
Complete 16 semester hours of ENGL courses.		16

Dissertation

Code	Title	Hours
Exam Preparation		
ENGL 8960	Exam Preparation—Doctoral (Only needed for PhD students who have completed coursework but have yet to complete the comprehensive exams. Not repeatable.)	

Research

ENGL 9986	Research	
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Dissertation

Complete the following (repeatable) course twice:

ENGL 9990 Dissertation

Dissertation Continuation

Following completion of two semesters of ENGL 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

ENGL 9996 Dissertation Continuation

Program Credit/GPA Requirements

24 total semester hours required

Minimum 3.500 GPA required

English, MA

The Master of Arts degree launches students into the study of literature, writing, and rhetoric at the graduate level. The program offers two years of intensive study in the major fields of British and American literature, covering the debates and approaches that animate the discipline of English. Our MA graduates are fully prepared to proceed to study at the doctoral level, and their training in critical thinking, language skills, and cultural history has also proven to be fruitful preparation for a range of careers outside of academia.

The master's program offers an optional cooperative education experience (co-op) to eligible students. Co-operative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Academic Standing/Progress

To be considered in good academic standing, MA students must be making progress toward their degree requirements, including maintaining a 3.000 minimum cumulative grade-point average (GPA).

General Regulations

Program requirements are described in the CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students) and the Graduate Program in English MA Guide (<https://www.northeastern.edu/cssh/english/graduate/current-student-resources>). Both documents are updated annually.

Program Requirements

Milestones

Annual progress review

One language

Comprehensive examination (timed examination and thesis options)

Core Requirements

Code	Title	Hours
Proseminar		
ENGL 5103	Proseminar	4
Theories and Methods		
Complete 4 semester hours from the following:		4
ENGL 7342	Topics in Criticism	

ENGL 7351 Topics in Literary Study (selected topics only)

ENGL 7358 Topics in Literature and other Disciplines (selected topics only)

ENGL 7370 Topics in Digital Humanities

WMNS 6100 Theorizing Gender and Sexuality

WMNS 7976 Directed Study (GCWS Consortium, selected topics only)

Writing and Rhetoric

Complete 4 semester hours from the following (if completing 12 semester hours of Literary Period requirements). 4-8

Complete 8 semester hours from the following (if completing 8 hours of Literary Period requirements).

ENGL 7111

ENGL 7112

ENGL 7121

ENGL 7360 Topics in Rhetoric

ENGL 7391

ENGL 7392 Writing and the Teaching of Writing (Master's students may register with permission from the instructor)

ENGL 7393

ENGL 7395 Topics in Writing

ENGL 7396

ENGL 7397

ENGL 7398

Literary Periods

Complete 8 semester hours from TWO of the following Literary Periods (if completing 8 semester hours of Writing and Rhetoric requirements), or Complete 12 semester hours from THREE of the following Literary Periods (if completing 4 semester hours of Writing and Rhetoric requirements): 8-12

Literature Pre-1700

ENGL 7213 Topics in Early American Literature

ENGL 7261

ENGL 7262

ENGL 7263

ENGL 7271

ENGL 7274

ENGL 7281 Topics in Medieval Literature

ENGL 7282 Topics in Renaissance Literature

ENGL 7283 Topics in 17th-Century Literature

ENGL 7342 Topics in Criticism (selected topics only)

ENGL 7358 Topics in Literature and other Disciplines (selected topics only)

Literature 1700–1900

ENGL 7212 (selected topics only)

ENGL 7214 Topics in 19th-Century American Literature

ENGL 7233

ENGL 7264

ENGL 7266

ENGL 7275

ENGL 7284 Topics in 18th-Century Literature

ENGL 7285

ENGL 7286		
ENGL 7291		
ENGL 7351	Topics in Literary Study (selected topics only)	
ENGL 7352	(selected topics only)	
<i>Literature Post-1900</i>		
ENGL 7211	(selected topics only)	
ENGL 7215	Topics in 20th-Century American Literature	
ENGL 7224		
ENGL 7244	African-American Novel	
ENGL 7251		
ENGL 7287		
ENGL 7351	Topics in Literary Study (selected topics only)	
ENGL 7355	(selected topics only)	
ENGL 7358	Topics in Literature and other Disciplines (selected topics only)	
ENGL 7359	(selected topics only)	
ENGL 7361		
ENGL 7362		
Comprehensive Examination Options		
Timed, Written Exam or Thesis		
<i>Master's Qualifying Exam</i>		
ENGL 7000	Qualifying Exam (Required for students who must maintain full-time status while completing the comprehensive examination)	0
<i>Thesis</i>		
A minimum 3.500 GPA is required to pursue this option.		
ENGL 6960	Exam Preparation—Master's (Required for students who must maintain full-time status while completing the MA Thesis. Not repeatable.)	0

Electives

Code	Title	Hours
	Complete 8 semester hours of ENGL courses.	8

Optional Co-op Experience

Code	Title	Hours
	Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:	2
ENGL 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

32 total semester hours required (34 with optional co-op)
Minimum 3.000 GPA required

Digital Humanities, Graduate Certificate

Elizabeth Maddock Dillon, PhD
Certificate Co-Director
e.dillon@northeastern.edu

Julia Flanders, PhD
Certificate Co-Director

j.flanders@northeastern.edu

Sarah Connell, PhD
Certificate Administrator
sa.connell@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Graduate Certificate in Digital Humanities allows students to pursue an organized course of study in digital humanities with the interdisciplinary faculty of the NULab for Texts, Maps, and Networks (<http://www.northeastern.edu/nulab>) while completing requirements for their degrees in existing Northeastern University doctoral and master's programs. *This is not a stand-alone certificate*; rather, it will be completed by students in the course of their existing program of study.

Digital humanities (DH) is an emerging field of research that is interdisciplinary in scope and collaborative in nature. The field is developing in relation to new digital technologies that have changed the objects of study, methods, and opportunities for research and teaching in existing humanities fields. Digitized texts are now read and accessed in new ways; digitized corpora of texts make possible new modes of quantitative and qualitative analysis (including "distant reading," text mining, mapping, and network analysis); born digital objects constitute new primary sources in need of humanistic theorization, approaches, and critical vocabularies; and modes of encoding, aggregating, and connecting texts enable the creation of new archival resources that are changing our understanding of the archive itself as well revealing new historical, literary, and cultural patterns.

The field is new and developing rapidly and many students are eager for training in this area—both because DH is at the cutting edge of disciplinary work and because it offers new opportunities for employment within the academy and outside of it.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose GPA falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Final Project

The student will complete a final independent DH research project located in the student's home program (such as a thesis, or a portion thereof) or participation in a collaborative DH project with substantial student participation. The final project will be overseen by the NULab faculty members teaching the NULab Project Seminar during its development; NULab workshop instructors will advise students on their projects and help students get guidance from other faculty as appropriate. Final projects will be submitted with three components: the project itself, a written project description of about 2,000 words, and a presentation to the NULab community. The DH certificate committee will formally approve all final projects.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Topics/Readings/Methods		
ENGL 7370	Topics in Digital Humanities (Introduction to Digital Humanities)	4
or HIST 7370	Texts, Maps, and Networks: Readings and Methods for Digital History	

Lab Project Seminar

Complete the following (repeatable) 2-credit course two times:		
INSH 7910	NULab Project Seminar	4

Elective

Code	Title	Hours
Complete 4 semester hours from the following:		
ARTG 5100	Information Design Studio 1: Principles	4
ARTG 5120	Research Methods for Design	
CS 6120	Natural Language Processing	
CS 7290	Special Topics in Data Science	
ENGL 7370	Topics in Digital Humanities	
INSH 6406	Analyzing Complex Digitized Data	
JRNL 6340	Fundamentals of Digital Journalism	
JRNL 6341	Telling Your Story with Data	
JRNL 6355	Seminar in Investigative Reporting	
HIST 7219	Topics in Cultural History (selected topics only)	
POLS 7334	Social Networks	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

Minimum 12 total semester hours required

Minimum 3.000 GPA required

History

Website (<https://www.northeastern.edu/cssh/history/graduate/programs>)

Heather Streets-Salter, PhD

Professor and Chair

Heather Streets-Salter, PhD

Professor, Chair, and Graduate Program Director, PhD and MA (World History concentration)

Martin Blatt, PhD

Professor of the Practice and Graduate Program Director, MA (Public History concentration)

249 Meserve Hall

617.373.2662

617.373.3661 (fax)

gradhistory@northeastern.edu

Graduate Programs Contact

Bonne Knipfer, Graduate Program Administrator,
b.knipfer@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

Graduate work in history focuses on global and world history, which study the interactions among geographical regions and historical processes around the globe. Students at both the master's and doctoral levels concentrate their work on the history of regions or peoples in Africa, Asia, Europe, Latin America, or the United States, with attention to the intersections and connections between national, regional, and global developments. The Department of History also offers a master's degree with a concentration in public history that emphasizes the study of topics such as material culture, historical exhibits and museums, historical agencies, and archival administration. Recent doctoral students have been the recipients of major fellowships for conducting dissertation research abroad, including Fulbright, Fulbright-Hays, Social Science Research Council, and Chateaubriand fellowships.

Programs

Doctor of Philosophy (PhD)

- History (p. 426)
- History—Advanced Entry (p. 427)

Master of Arts (MA)

- History (p. 428)

Graduate Certificate

- Public History (p. 429)

History, PhD

The PhD program, with a focus on global, transnational, and comparative history, seeks to train research historians who plan to teach at the college and university level. Systematic training in theory and methodology and preparation for college teaching are distinctive features of the Northeastern program.

Academic Standing/Progress

Students are required to maintain an overall GPA of at least 3.500. In addition, the PhD annual review is based on a report by the student's advisor, with attention to:

1. Success in setting up a doctoral committee
2. Passing the departmental language examination in the language of their field
3. Successful performance of teaching assistant duties
4. Successful completion of courses in the tiered system (i.e., the required course sequence)
5. Successful completion, where appropriate, of other required activities, including construction of the comprehensive examination list and the dissertation proposal and scheduling of comprehensive examinations

Doctoral Degree Candidacy

Students entering without an MA in history must complete 45 semester hours and must pass the qualifying examination by the end of the third year in the program. Upon completion of these two requirements, students will be deemed PhD degree candidates by the college.

Program Requirements

Milestones

Qualifying examination
Annual review
Language
PhD candidacy
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Theory and Methodology		
A grade of B or higher is required:		
HIST 5101	Theory and Methodology 1	4
HIST 5102	Theory and Methodology 2	4
Digital History		
HIST 7370	Texts, Maps, and Networks: Readings and Methods for Digital History	4
Readings or Directed Study		
Complete 20 semester hours in either Readings or Directed Study:		20
HIST 8982	Readings	
or HIST 7976	Directed Study	
Research Seminar		
HIST 7314	Research Seminar in World History	4
Practicum		
HIST 8409	Practicum in Teaching	1

Electives

Code	Title	Hours
Complete 8 semester hours from the following range:		8
HIST 7200 to HIST 7702		

Dissertation

Code	Title	Hours
Exam Preparation		
Only needed for PhD students who have completed all course work but have not yet passed the comprehensive exam:		
HIST 8960	Exam Preparation—Doctoral	
Dissertation		
Complete the following (repeatable) course twice:		
HIST 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of HIST 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:		
HIST 9996	Dissertation Continuation	

Program Credit/GPA Requirements

45 total semester hours required
Minimum 3.500 GPA required

History, PhD—Advanced Entry

The PhD program, with a focus on global, transnational, and comparative history seeks to train research historians who plan to teach at the college

and university level. Systematic training in theory and methodology and preparation for college teaching are distinctive features of the Northeastern program.

Academic Standing/Progress

Students are required to maintain an overall GPA of at least 3.500. In addition, the PhD annual review is based on a report by the student's advisor, with attention to:

1. Success in setting up a doctoral committee
2. Passing the departmental language examination in the language of their field
3. Successful performance of teaching assistant duties
4. Successful completion of courses in the tiered system (i.e., the required course sequence)
5. Successful completion, where appropriate, of other required activities, including construction of the comprehensive examination list and the dissertation proposal and scheduling of comprehensive examinations

Doctoral Degree Candidacy

Students entering with an MA in history from outside Northeastern must complete 37 semester hours and must pass the qualifying examination by the end of the third year in the program. Upon completion of these two requirements, students will be certified as PhD degree candidates by the college.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review
Language
PhD Candidacy
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Theory and Methodology		
A grade of B or higher is required:		
HIST 5101	Theory and Methodology 1	4
HIST 5102	Theory and Methodology 2	4
Digital History		
HIST 7370	Texts, Maps, and Networks: Readings and Methods for Digital History	4
Readings or Directed Study		
Complete 12 semester hours of either Readings or Directed Study:		12
HIST 8982	Readings	
or HIST 7976	Directed Study	
Research Seminar		
HIST 7314	Research Seminar in World History	4
Practicum		
HIST 8409	Practicum in Teaching	1

Electives

Code	Title	Hours
Complete 8 semester hours from the following range:		8
HIST 7200 to HIST 7702		

Dissertation

Code	Title	Hours
Exam Preparation		

Only needed for PhD students who have completed all course work but have yet to pass the comprehensive exam. Not repeatable.

HIST 8960	Exam Preparation—Doctoral	
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Dissertation

Complete the following (repeatable) course twice:

HIST 9990	Dissertation	
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Dissertation Continuation

Following completion of two semesters of HIST 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

HIST 9996	Dissertation Continuation	
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Program Credit/GPA Requirements

37 total semester hours required

Minimum 3.500 GPA required

History, MA

The Master of Arts in History offers two concentrations: public history and world history.

Public history encompasses the practice of history outside the academy in museums, state and local historical societies, archives, the National Park Service, and more. Public history includes the study of such topics as material culture, historical exhibits and museums, historical agencies, archival administration, and how difficult issues including slavery and site of violence are presented to the public.

World history focuses on the history of regions or peoples in Africa, Europe, Latin America, Asia, or the United States, with attention to the intersections and connections between national, regional, and global developments.

The master's program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences as practicing public historians. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Academic Standing/Progress

Students are expected to maintain a 3.000 grade-point average (GPA). Should the GPA drop below 3.000, the student will be placed on academic probation and allowed one more semester to bring his or her GPA to the 3.000 level. If the student is not able to meet this requirement by the end of the following semester, the student may be asked to leave the program.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

The Master of Arts in History offers two concentrations: world history (p. 428) and public history (p. 428). The program requires a concentration. Please consult with a Department of History graduate program director for additional details.

Concentration in World History

CORE REQUIREMENTS

Code	Title	Hours
Theory and Methodology		
A grade of B or higher is required:		
HIST 5101	Theory and Methodology 1	4
HIST 5102	Theory and Methodology 2	4
Research Seminar		
HIST 7301 to HIST 7325		4

ELECTIVES

Code	Title	Hours
Complete 20 semester hours from the following:		20
HIST 5101 to HIST 5295		
HIST 7205 to HIST 7218		
HIST 7220 to HIST 7297		

Concentration in Public History

CORE REQUIREMENTS

Code	Title	Hours
Theory and Methodology		
A grade of B or higher is required:		
HIST 5101	Theory and Methodology 1	4
Public History		
HIST 5237	Issues and Methods in Public History	4
Digital History		
HIST 7370	Texts, Maps, and Networks: Readings and Methods for Digital History	4
Fieldwork		
Complete the following (repeatable) course twice:		4
HIST 8410	Fieldwork in History 1	
Research Seminar		
Complete 4 semester hours from the following:		4
HIST 7301 to HIST 7325		
HIST 5000 to 5900		

ELECTIVES

Code	Title	Hours
Complete 12 semester hours from the following:		12
HIST 5238 to HIST 5248		
HIST 5295 to HIST 6966		
HIST 7201 to HIST 7297		

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2

HIST 6964 Co-op Work Experience
and INSH 6864 and Experiential Integration

Program Credit/GPA Requirements

32 total semester hours required (34 with optional co-op)
Minimum 3.000 GPA required

Public History, Graduate Certificate

The Graduate Certificate in Public History allows students to pursue an organized course of study in public history while completing requirements for their degrees in existing doctoral and master's programs. Students have an opportunity to gain a knowledge of core methods and issues in the field of public history and are enabled to use public history approaches in their own research and work.

Public history is a well-established field of practice that marries academic research and methods to public applications and collaborations. Public historians typically work in museums, archives, historical societies, documentary film production, and social activism, though training in public history is useful to a wide variety of humanistic, social science, and legal fields.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Issues and Methods		
HIST 5237	Issues and Methods in Public History	4
Fieldwork		
Complete the following (repeatable) two-credit course twice:		4
HIST 8410	Fieldwork in History 1	

Elective

Code	Title	Hours
Complete one of the following:		
HIST 5238	Managing Nonprofit Organizations	
HIST 5241	Exhibits and Museums	
HIST 5244	Historic Preservation	
HIST 7219	Topics in Cultural History	
HIST 7240	Visual and Material Culture	
HIST 7250	Topics in Public History (Sites of Violence and Public Memory)	
HIST 7250	Topics in Public History (Public History and Slavery)	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Political Science

Website (<https://www.northeastern.edu/cssh/polisci>)

Thomas J. Vicino, PhD

Associate Professor and Chair
t.vicino@northeastern.edu

Graduate Program Directors

Mai'a K. Davis Cross, PhD

PhD and MA Programs
m.cross@northeastern.edu

Daniel Aldrich, PhD

MS Security and Resilience Studies Program
d.aldrich@northeastern.edu

903 Renaissance Park
617.373.4404
617.373.5311 (fax)
gradpolisci@northeastern.edu

Graduate Programs Contact
Rosy Trovato, Graduate Program Administrator,
r.trovato@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

Graduate training in political science prepares students to analyze important issues in world affairs and succeed in a wide array of careers—from government and academia to the nonprofit and private sectors. Graduate programs in political science, public policy, public administration, security and resilience studies, and international affairs at Northeastern explore the theory and practice of politics, public policy, and public management in the United States and throughout the world. In teaching and research, faculty members in the department cover a broad range of topics and issues in the field of political science. Core areas of inquiry within our department include national and international security, international and U.S. public policy, resilience, network science, European studies, Middle East studies, and democratization and development.

Programs

Doctor of Philosophy (PhD)

- Political Science (p. 429)
- Political Science, PhD—Advanced Entry (p. 430)

Master of Arts (MA)

- Political Science (p. 431)

Master of Public Administration (MPA)

- Public Administration (p. 433)

Master of Science (MS)

- Security and Resilience Studies (p. 434)

Graduate Certificate

- Security and Resilience Studies (p. 436)

Political Science, PhD

Mai'a K. Davis Cross, PhD

Graduate Program Director
m.cross@northeastern.edu

Rosy Trovato, Graduate Program Administrator, 617.373.4404,
r.trovato@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Doctor of Philosophy in Political Science is grounded in the core fields of the discipline—American government and politics, comparative politics, international relations, and public policy. Students identify a primary and secondary field as areas of emphasis. The curriculum introduces students to the core fields and also seeks to develop their research skills through a series of methods courses. Students may develop a traditional, academic focus in one of the fields, or they may combine it with public policy to highlight a policy orientation. The program focuses on preparing students to be academic scholars and teachers as well as practitioners in research and public service. The PhD degree includes completion of required courses, passing a written and oral comprehensive examination, and the successful defense of the dissertation before a faculty committee.

Credit Requirements

Students entering with a bachelor's degree must complete 56 semester hours. Students currently in the MA or MPA program and accepted into the PhD program before completing the MA or MPA must complete 56 semester hours as well as all curriculum requirements of the PhD program.

Doctoral Degree Candidacy

Doctoral degree candidacy is attained after successfully completing all course work and passing written and oral comprehensive examinations.

Academic Standing/Progress

All doctoral students must maintain an overall cumulative grade-point average (GPA) of 3.500 while making progress toward the degree requirements. Students who fall below any applicable standard for two consecutive semesters are subject to dismissal from the graduate program. Additionally, receipt of financial support administered by the department, college, or university is contingent on satisfactory academic progress toward the degree and specific guidelines as published in the terms of award. Students who have ungraded courses or courses graded as incomplete risk no longer being eligible for financial aid awards.

Language Proficiency

Students who conduct research in a language other than English must demonstrate proficiency as necessary for completion of the dissertation. Language courses do not count as electives.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Comprehensive examination
Annual review
Language (as determined by committee)
PhD candidacy
Dissertation proposal
Dissertation committee
Dissertation defense

Core Requirements

Code	Title	Hours
Seminars		
Complete 12 semester hours from the following:		12
POLS 7204	Seminar in Public Policy	

POLS 7205	Seminar in American Government and Politics	
POLS 7206	Seminar in Comparative Politics	
POLS 7207	Seminar in International Relations	
Inquiry and Design		
POLS 7201	Research Design	4
Quantitative Techniques		
POLS 7202	Quantitative Techniques	4
LPSC 7215	Advanced Quantitative Techniques	4
Advanced methods courses from other disciplines may be chosen in consultation with your faculty advisor.		

Electives

Courses from other disciplines may be chosen in consultation with your faculty advisor.

Code	Title	Hours
Complete 32 semester hours in the following:		32
POLS 7200 to POLS 7978		

Dissertation

Code	Title	Hours
Exam Preparation		
POLS 8960	Exam Preparation—Doctoral (Only required for PhD students who have completed coursework but have yet to complete the comprehensive exam. Required for students who must maintain full-time status while completing thesis or comprehensive exam.)	

Dissertation

Complete the following (repeatable) course twice:

POLS 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of POLS 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:		
POLS 9996	Dissertation Continuation	

Program Credit/GPA Requirements

56 total semester hours required
Minimum 3.500 GPA required

Political Science, PhD—Advanced Entry

Mai'a K. Davis Cross, PhD
Graduate Program Director
m.cross@northeastern.edu

Rosy Trovato, Graduate Program Administrator, 617.373.4404,
r.trovato@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Doctor of Philosophy in Political Science is grounded in the core fields of the discipline—American government and politics, comparative politics, international relations, and public policy. Students identify a primary and secondary field as areas of emphasis. The curriculum

introduces students to these fields and also seeks to develop their research skills through a series of methods courses. Students may develop a traditional, academic focus in one of the fields, or they may combine it with public policy to highlight a policy orientation. The program is designed to prepare students to be academic scholars and teachers as well as practitioners in research and public service. The PhD degree requires completion of required courses, passing a written and oral comprehensive examination, and the successful defense of the dissertation before a faculty committee.

Credit Requirements and Advanced Standing

Students entering with a master’s degree from outside Northeastern may receive advanced standing for relevant prior course work but must complete a minimum of 32 semester hours. Students entering with a Northeastern MA in political science must complete a minimum of 24 semester hours while also satisfying all PhD course requirements. Master’s-level course work that results in advanced standing is evaluated by the graduate program director to determine its applicability to the PhD curriculum.

Doctoral Degree Candidacy

Doctoral degree candidacy is attained after successful completion of all course work and passing written and oral comprehensive examinations.

Academic Standing/Progress

All doctoral students must maintain an overall cumulative grade-point average (GPA) of 3.500 while making progress toward the degree requirements. Students who fall below any applicable standard for two consecutive semesters are subject to dismissal from the graduate program. Additionally, receipt of financial support administered by the department, college, or university is contingent on satisfactory academic progress toward the degree and specific guidelines as published in the terms of award. Students who have ungraded courses or courses graded as incomplete risk no longer being eligible for financial aid awards.

Language Proficiency

For students who conduct research in a language other than English, he or she must demonstrate proficiency as necessary for completion of the dissertation. Language courses do not count as electives.

Program Requirements

Complete all courses and requirements listed below.

Milestones

- Comprehensive examination
- Annual review
- Language (as determined by committee)
- PhD candidacy
- Dissertation proposal
- Dissertation committee
- Dissertation defense

Core Requirements

Consult the graduate program director regarding which major-required courses apply to your individual plan of study.

Code	Title	Hours
Seminar		
Complete 4–12 semester hours from the following:		4-12
POLS 7204	Seminar in Public Policy	
POLS 7205	Seminar in American Government and Politics	

POLS 7206	Seminar in Comparative Politics	
POLS 7207	Seminar in International Relations	
Inquiry and Design		
POLS 7201	Research Design	4
Quantitative Techniques		
POLS 7202	Quantitative Techniques	4
LPSC 7215	Advanced Quantitative Techniques	4
Advanced methods courses from other disciplines may be chosen in consultation with your faculty advisor.		

Electives

Courses from other disciplines may be chosen in consultation with your faculty advisor.

Code	Title	Hours
Complete 8–20 semester hours in the following:		8-20
POLS 7200 to POLS 7978		

Dissertation

Code	Title	Hours
Exam Preparation		
POLS 8960	Exam Preparation—Doctoral (Only required for PhD students who have completed coursework but have yet to complete the comprehensive exam.)	

Dissertation

Complete the following (repeatable) course twice:

POLS 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of POLS 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:		
POLS 9996	Dissertation Continuation	

Program Credit/GPA Requirements

24–44 total semester hours required
 Minimum 3.500 GPA required

Political Science, MA

Mai’a K. Davis Cross, PhD

Graduate Program Director
 m.cross@northeastern.edu

Rosy Trovato, Graduate Program Administrator, 617.373.4404,
 r.trovato@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Master of Arts program focuses on the core scholarly areas of political science. Students specialize in one of five concentration areas: American government and politics, comparative government and politics, international relations, public policy, and security studies. Courses in the MA program serve as a foundation for work in a doctoral program or as preparation for careers in government, nonprofit organizations, or related work in the private sector.

To earn the Master of Arts in Political Science degree at Northeastern, you must successfully complete 32 semester hours (typically eight

courses) of credit. Full-time students can expect to complete the degree within two academic years. Course work consists of 4 semester hours in a required statistics course, 12 semester hours within a chosen concentration, and 16 semester hours of electives (including the experiential education requirement). To see the full breakdown, click the Program Requirements tab above.

Academic Standing/Progress

Satisfactory progress in the MA program includes maintaining a grade-point average (GPA) of 3.000 overall as well as in the student's concentration area. A final cumulative GPA of at least 3.000 in all course work is required to qualify for the Master of Arts degree. Any course in which a student earns lower than a C grade cannot be used to fulfill concentration area requirements. A student who fails to make satisfactory progress is placed on academic probation, which is a warning that the student may not be allowed to continue in the graduate program unless the deficiency is addressed.

Experiential Education Requirement

In addition to in-class course work, students are required to complete an experiential education component that advances their learning, research, and/or career objectives. Experiential education offers MA students a direct experience with focused reflection relevant to their academic studies. For students with research interests, the experience focuses on related activities, such as primary source analysis and data gathering. For other students, the experience involves engagement with areas of practice and policy, such as an internship. Students register for the relevant course with a minimum of 4 semester hours and maximum of 8 semester hours to satisfy the experiential education requirement.

An optional cooperative education experience (co-op) can also satisfy the experiential education requirement. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities Experiential Liberal Arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
Quantitative Techniques		
POLS 7202	Quantitative Techniques	4

Concentrations

- American Government (p. 432)
- International Relations (p. 432)
- Comparative Politics (p. 432)
- Public Policy (p. 432)
- Security Studies (p. 433)

AMERICAN GOVERNMENT CONCENTRATION

Code	Title	Hours
Seminar		
POLS 7205	Seminar in American Government and Politics	4
American Government Courses		
Complete 8 semester hours from the following:		8
POLS 7251	Congress and Policy	
POLS 7313	State Government	
POLS 7341	Security and Resilience Policy	
PPUA 6502	Economic Institutions and Analysis	
PPUA 6505	Public Budgeting and Financial Management	
PPUA 6530	State and Local Public Finance	
PPUA 7240	Health Policy and Politics	
PPUA 7245	Education Policy in the United States	

INTERNATIONAL RELATIONS CONCENTRATION

Code	Title	Hours
Seminar		
POLS 7207	Seminar in International Relations	4
International Relations Courses		
Complete 8 semester hours from the following:		8
POLS 7325	Contemporary Issues in Third World Development	
POLS 7341	Security and Resilience Policy	
POLS 7369	International Security	
POLS 7376	Government and Politics of the Middle East	
POLS 7394	Topical Seminar in International Relations	
PPUA 7243	International Development Administration and Planning	
PPUA 7244	Comparative Public Policy and Administration	

COMPARATIVE POLITICS CONCENTRATION

Code	Title	Hours
Seminar		
POLS 7206	Seminar in Comparative Politics	4
Comparative Politics Courses		
Complete 8 semester hours from the following:		8
POLS 7325	Contemporary Issues in Third World Development	
POLS 7333	Science, Technology, and Public Policy	
POLS 7352	Democratization: Basic Approaches	
POLS 7362	Nationalism	
POLS 7366	Genocide in a Comparative Perspective	
POLS 7370	Europe and European Union Governance	
PPUA 7244	Comparative Public Policy and Administration	

PUBLIC POLICY CONCENTRATION

Code	Title	Hours
Seminar		
POLS 7204	Seminar in Public Policy	4

or PPUA 6506	Techniques of Policy Analysis	
Public Policy Courses		
Complete 8 semester hours from the following:		8
POLS 7251	Congress and Policy	
POLS 7333	Science, Technology, and Public Policy	
POLS 7341	Security and Resilience Policy	
POLS 7362	Nationalism	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6507	Institutional Leadership and the Public Manager	
PPUA 6509	Techniques of Program Evaluation	
PPUA 6552	The Nonprofit Sector in Civil Society and Public Affairs	
PPUA 7239	Problems in Metropolitan Policymaking	
PPUA 7240	Health Policy and Politics	
PPUA 7244	Comparative Public Policy and Administration	
PPUA 7245	Education Policy in the United States	

SECURITY STUDIES CONCENTRATION

Code	Title	Hours
Seminar		
POLS 7341	Security and Resilience Policy	4
Security Studies Courses		
Complete 8 semester hours from the following:		8
POLS 7343 to POLS 7349		
POLS 7369	International Security	

Electives

Code	Title	Hours
Complete 16 semester hours in the following range: ¹		16
POLS 5100 to POLS 7990		

Optional Co-op Experience

Code	Title	Hours
Complete two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
POLS 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

32 total semester hours required (34 with optional co-op)
Minimum 3.000 GPA required

¹ Students who do not complete the Optional Co-Op Experience are required to complete 4-8 semester hours from POLS 7407, POLS 7976, POLS 7980, or POLS 7990 to complete the Experiential Education Requirement

Public Administration, MPA

Christopher Bosso, PhD
Graduate Program Director
c.bosso@northeastern.edu
310 Renaissance Park
617.373.4398

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Master of Public Administration (MPA) is the management and leadership degree for those seeking to serve the public good. The program seeks to equip its students with skills in policy analysis, program evaluation, research methods, and written and verbal communications. Students have an opportunity to develop competencies in budgeting and human resources, organizational management and leadership, and the interplay between ethics and accountability in a diverse society. Throughout the degree program, students gain career-oriented experience through internships, small group projects, and other interactions with professionals in the field. These experiences are designed to enable the Northeastern MPA graduate to move into a wide array of public and nonprofit sector positions at the local, state, national, and international levels.

Mission Statement

The mission of the MPA program at Northeastern University is to serve the needs of the public affairs community, including students, working professionals, faculty, and researchers, by providing a practice-oriented and research-based graduate educational experience. The faculty pledges the best instruction available in a set of courses designed to integrate theoretical foundations with practical skills. The MPA program will prepare students to be effective in a dynamic and increasingly diverse professional environment. We also commit ourselves to assisting students in every possible way to secure internships, postgraduate employment, and overall career advancement. Students, in turn, are expected to meet high levels of academic excellence combined with ethical and professional integrity. Committed to the ideals of public service and advancing the public interest, we seek students who share the same enthusiasm.

The MPA program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

The Northeastern University MPA program is nationally accredited by NASPAA.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative 3.000 GPA is required for the core requirements.

Code	Title	Hours
Quantitative Techniques		
LPSC 7305 or POLS 7202 or INSH 6500	Research and Statistical Methods Quantitative Techniques Statistical Analysis	4
Analysis		
PPUA 6506	Techniques of Policy Analysis	4
PPUA 6502	Economic Institutions and Analysis	4
Administration and Management		
PPUA 6500	Principles of Public Administration	4
PPUA 6505	Public Budgeting and Financial Management	4
PPUA 6507	Institutional Leadership and the Public Manager	4
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4

Internship Requirement

An approved internship or waiver is required.

Code	Title	Hours
Internship Waived		
<i>Electives</i>		
Complete 12 semester hours from the Course List. (p. 434)		12
OR		
Internship Completed for Course Credit		
PPUA 6862	Internship with Research	4
<i>Electives</i>		
Complete 8 semester hours from the Course List. (p. 434)		8
OR		
Internship Completed Not for Course Credit		
PPUA 6861	Internship	0
<i>Electives</i>		
Complete 12 semester hours from the Course List. (p. 434)		12

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Course List

Code	Title	Hours
LPSC 5000 to LPSC 7999		
PPUA 5000 to PPUA 7999		
CRIM 5000 to CRIM 7999 (by advisement only)		
ECON 5000 to ECON 7999 (by advisement only)		
ENGL 5000 to ENGL 7999 (by advisement only)		
HIST 5000 to HIST 7999 (by advisement only)		
POLS 5000 to POLS 7999 (by advisement only)		
SOCL 5000 to SOCL 7999 (by advisement only)		

Program Credit/GPA Requirements

40 total semester hours required (42 with optional co-op)
Minimum 3.000 GPA

Security and Resilience Studies, MS

Daniel Aldrich, PhD

Graduate Program Director
d.aldrich@northeastern.edu

Rosy Trovato

Graduate Program Administrator
617.373.4404
r.trovato@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

Security and resilience studies is an emerging field of inquiry that focuses on how global, national, and subnational actors manage a range of chronic transnational challenges—such as terrorism, organized crime, weapons proliferation, cyberattacks, bioterrorism, climate change and catastrophic disasters, migration, and radicalization—that can be destabilizing to societies. It explores how strategic doctrines, organization processes, bureaucratic behaviors, and security tools and tactics are adapting to these challenges by placing greater emphasis on resilience. Resilience is a concept rooted in multiple disciplines that is gaining widespread currency at the community, societal, and global levels given the prevalence of human-made and naturally occurring threats that do not lend themselves to preventive and protective measures. Strategies for dealing with these threats emphasize measures that mitigate, respond to, recover from, and adapt to risk in order to safeguard essential functions and societal values. Many of these measures involve the role of technologies, system design, and engineering as well as policy, regulatory, and governance issues. Students at Northeastern who enroll in the Master of Science in Security and Resilience Studies have an opportunity to become prepared to inform and support domestic and international efforts to deal with the major sources of turbulence in the 21st century.

The master's program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

To earn the Master of Science in Security and Resilience Studies degree at Northeastern, you must successfully complete 32 semester hours of credit (34 semester hours with co-op). Full-time students can expect to complete the degree within one calendar year. This program can be completed either at Northeastern University's Boston campus or online.

Academic Standing/Progress

Satisfactory progress in the MS program includes maintaining a minimum grade-point average of 3.000.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code **Title** **Hours**

Required Core Courses

POLS 7341	Security and Resilience Policy ¹	4
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Core Elective Courses

Complete 8 semester hours from the following: 8

CRIM 7200	Criminology	
POLS 7343	Counterterrorism ¹	
POLS 7346	Resilient Cities ¹	
or PPUA 7346	Resilient Cities	
POLS 7369	International Security ¹	
POLS 7441	Cyberconflict ¹	
PPUA 5390	Special Topics in Public Policy and Urban Affairs	

Research Methods

Complete 4 semester hours from the following: 4

CRIM 7404	Research Methods and Statistics	
INSH 6300	Research Methods in the Social Sciences	
POLS 7201	Research Design	
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	
SOCL 7211	Research Methods	

Capstone

Code **Title** **Hours**

Choose one of the following options in consultation with faculty advisor and program director: 4

POLS 7980	Capstone Project	
or PPUA 7673	Capstone in Public Policy and Urban Affairs	

Electives

Electives are organized by themes to allow students to think thematically.

Code **Title** **Hours**

Complete 12 credits from any combination of the following elective themes: 12

- Administration, Management, and Policy (p. 435)
- Counterterrorism and Conflict Studies (p. 435)
- Cybersecurity Policy (p. 435)
- Resilient Cities (p. 435)
- Criminal Justice (p.)

ADMINISTRATION, MANAGEMENT, AND POLICY

Code **Title** **Hours**

CRIM 7202	The Criminal Justice Process	
CRIM 7230	Police and Society	
CRIM 7404	Research Methods and Statistics	
POLS 7202	Quantitative Techniques	
POLS 7387	Global Governance	
POLS 7704	Critical Infrastructure Resilience ¹	
PPUA 6502	Economic Institutions and Analysis	

PPUA 6503	Public Personnel Administration ¹	
PPUA 6504	Organizational Theory and Management ¹	
PPUA 6505	Public Budgeting and Financial Management ¹	
PPUA 6506	Techniques of Policy Analysis ¹	
PPUA 6507	Institutional Leadership and the Public Manager ¹	

COUNTERTERRORISM AND CONFLICT STUDIES

Code **Title** **Hours**

CRIM 7201	Global Criminology	
CRIM 7264	Immigration and Crime	
POLS 7343	Counterterrorism ¹	
POLS 7344	Hard Power, Soft Power, and Smart Power	
POLS 7366	Genocide in a Comparative Perspective	
POLS 7369	International Security ¹	

CYBERSECURITY POLICY

Code **Title** **Hours**

CRIM 7246	Security Management	
CRIM 7260	Topics in Criminal Justice	
IA 5001	Cyberspace Technology and Applications	
IA 5010	Foundations of Information Assurance ¹	
IA 5200	Security Risk Management and Assessment ¹	
IA 5210	Information System Forensics ¹	
IA 5240	Cyberlaw: Privacy, Ethics, and Digital Rights ¹	
IA 5250	Decision Making for Critical Infrastructure	
POLS 7441	Cyberconflict ¹	

RESILIENT CITIES

Code **Title** **Hours**

CRIM 7200	Criminology	
CRIM 7270	Crime and Community Context	
CRIM 7312	Special Topics in Criminology and Public Policy	
CRIM 7316	Advanced Topics in Methods	
LPSC 7312	Cities, Sustainability, and Climate Change	
POLS 7346	Resilient Cities ¹	
or PPUA 7346	Resilient Cities	
POLS 7704	Critical Infrastructure Resilience ¹	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5266	Urban Theory and Science	
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	

PPUA 6205	Research Design and Methodology in Urban and Regional Policy
PPUA 7237	Advanced Spatial Analysis of Urban Systems

CRIMINAL JUSTICE

Code	Title	Hours
CRIM 7200	Criminology	
CRIM 7201	Global Criminology	
CRIM 7202	The Criminal Justice Process	
CRIM 7260	Topics in Criminal Justice	
CRIM 7262	Evidence-Based Crime Policy	
CRIM 7312	Special Topics in Criminology and Public Policy	
CRIM 7316	Advanced Topics in Methods	

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
POLS 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

32 total semester hours (34 with optional co-op) required
Minimum 3.000 GPA required

¹ Occasional online offering

Security and Resilience Studies, Graduate Certificate

Program Director

Daniel Aldrich, PhD, d.aldrich@northeastern.edu

Program Administrator

Rosy Trovato, r.trovato@northeastern.edu
617.373.4404

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The goal of the Graduate Certificate in Security and Resilience Studies is to prepare students to manage contemporary transnational risks by offering them an opportunity to gain a comprehensive understanding of the principles and policies for security and resilience of critical systems. This goal is achieved by:

- Passing a core course in security and resilience policy that introduces students to a comprehensive approach to managing transnational risks
- Passing recommended foundation courses for cyberspace policy, security administration, and counterterrorism specializations that provide a broad perspective on transnational threats and the means states use to address them
- Learning how to work with others in groups and exercise leadership in teams by completing group assignments and projects

The certificate requires students to take three courses for a total of 12 semester hours. This program can be completed at Northeastern University's Boston campus or online.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
POLS 7341	Security and Resilience Policy	4

Electives

Code	Title	Hours
Complete 8 semester hours from the following:		8
CRIM 7200	Criminology	
POLS 7343	Counterterrorism	
POLS 7346	Resilient Cities	
POLS 7369	International Security	
POLS 7441	Cyberconflict	
PPUA 5390	Special Topics in Public Policy and Urban Affairs	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

School of Public Policy and Urban Affairs

Website (<http://www.northeastern.edu/cssh/policyschool>)

Jennie Stephens, PhD

Director

j.stephens@northeastern.edu

Graduate Program Directors

Alan Clayton-Matthews, PhD

PhD Program, Public Policy

a.clayton-matthews@northeastern.edu

Christopher Bosso, PhD

JD/MS Program, Law and Public Policy

MPP Program, MPA Program

Certificate Program, Public Policy Analysis

Certificate Program, Nonprofit Sector, Philanthropy, and Social Change

c.bosso@northeastern.edu

Jeffrey Juris, PhD

MA Program, International Affairs

j.juris@northeastern.edu

Daniel O'Brien, PhD

MS Program, Urban Informatics

Certificate Program, Urban Analytics

d.obrien@northeastern.edu

Gavin Shatkin, PhD

MS Program, Urban and Regional Policy

Certificate Program, Urban Studies

g.shatkin@northeastern.edu

Jennie Stephens, PhD

MS Program, Environmental Science and Policy

Professor and Graduate Program Director

j.stephens@northeastern.edu

310 Renaissance Park
617.373.8900
617.373.7905 (fax)
sppua@northeastern.edu

Graduate Programs Contacts

Louis DaRos, Graduate Program Administrator, l.daros@northeastern.edu
Julie Switkes, Graduate Program Administrator,
j.switkes@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The School of Public Policy and Urban Affairs is nationally and internationally recognized for excellence and innovation in policy-oriented education, applied research, and engagement. Our mission is to educate professional master's and doctoral students who are sought after as policy analysts, program evaluators, and leaders of nonprofit, public, private sector, and academic institutions; to create and disseminate policy-relevant knowledge and analytical methods of value to policymakers and the public; and to serve the broader community through policy analysis and technical assistance.

The school is committed to excellence in research and education on pressing and emerging policy issues of the day—public health, climate change, environmental challenges, the court and justice systems, and creating sustainable and resilient cities that provide economic opportunity for their residents. We define our approach as locally informed and internationally relevant. Our hallmark is to engage students in building the world that they would like to live in through experiential learning opportunities and applied research.

Programs

Doctor of Philosophy (PhD)

- Public Policy (p. 437)
- Public Policy—Advanced Entry (p. 439)

Master of Arts (MA)

- International Affairs (p. 441)

Master of Public Administration (MPA)

- Public Administration (p. 433)

Master of Public Policy (MPP)

- Public Policy (p. 443)

Master of Science (MS)

- Urban Informatics (STEM Program) (p. 444)
- Urban and Regional Policy (p. 447)
- Urban Planning and Policy (p. 66)
- Environmental Science and Policy (College of Science) (p. 389)
- Engineering and Public Policy with Concentration in Energy and Environment (College of Engineering) (p. 146)
- Engineering and Public Policy with Concentration in Infrastructure Resilience (College of Engineering) (p. 147)

Dual Degree

- Law and Public Policy, JD/MS (p. 454)

Graduate Certificates

- Public Policy Analysis (p. 452)
- Nonprofit Sector, Philanthropy, and Social Change (p. 452)
- Urban Analytics
- Urban Studies (p. 454)

Public Policy, PhD

Website (<https://www.northeastern.edu/cssh/policyschool/law-public-policy-phd>)

Alan Clayton-Matthews, PhD

Graduate Program Director
a.clayton-matthews@northeastern.edu (a.clayton-matthews@northeastern.edu)
310 Renaissance Park
617.373.2909

Julie Switkes, Graduate Program Administrator, 617.373.2891,
j.switkes@northeastern.edu (j.switkes@northeastern.edu)

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

This is an interdisciplinary social science program that combines several social science and legal theoretical perspectives with both quantitative and qualitative research methodologies. The wide-ranging faculty in the School of Public Policy and Urban Affairs can support students' research and dissertations in many fields—urban policy and regional economic development; sustainability and climate change; health policy; crime, social justice, and inequality; and the intersection of law and policy. Students work with faculty members to formulate a plan of study within their field of concentration by choosing courses from graduate programs offered in the policy school, the College of Social Sciences and Humanities, and in other colleges and schools at Northeastern University. Students also study a common body of knowledge developed in core courses on policy, research methods, and law. The school's research centers and faculty members' research projects provide opportunities for students to develop insight, experience, and synergies to help with their own research goals. The college and school offer a high level of support allowing all students to be devoted full-time to their studies and research.

Doctoral Degree Candidacy

Complete all required course work with a minimum 3.500 grade-point average (GPA) in the core courses and pass the comprehensive examinations. Students entering without a JD or master's degree must complete 55 semester hours.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Comprehensive examination
Seminars
Annual review
PhD candidacy
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

A grade of B+ or higher is required in each course.

Code	Title	Hours
Seminar		
POLS 7204	Seminar in Public Policy	4
PPUA 7976	Directed Study	1-4
Research and Statistical Methods		
INSH 6500	Statistical Analysis	4
INSH 6302	Qualitative Methods	4
INSH 6300	Research Methods in the Social Sciences	4
Advanced Methods		
Complete one of the following. An additional concentration elective may be taken in lieu of the advanced methods elective:		4
INSH 7500	Advanced Quantitative Analysis	
or INSH 7600	Advanced Methodological and Quantitative Techniques	

Experiential Research Residency

A PhD research residency or waiver is required.

Code	Title	Hours
PPUA 9980	Experiential PhD Research Residency	0

Concentrations

Complete one of the following concentrations:

- Sustainability and Resilience (p. 438)
- Health Policy and Management (p. 438)
- Urban and Regional Policy (p. 438)

SUSTAINABILITY AND RESILIENCE

Code	Title	Hours
Seminar		
PPUA 7511		
Law Requirement		
Complete 3 semester hours from the following:		3
LW 7329	Environmental Law	
LW 7494		
LW 7514		
LW 7580		
Electives		
Complete 24 semester hours from the following:		24
CIVE 7110	Critical Infrastructure Resilience	
LPSC 7312	Cities, Sustainability, and Climate Change	
POLS 7333	Science, Technology, and Public Policy	
POLS 7341	Security and Resilience Policy	
POLS 7704	Critical Infrastructure Resilience	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
PPUA 7249	Urban Coastal Sustainability	
PPUA 7336	Social Capital and Resilience	
PPUA 7346	Resilient Cities	

PPUA 7976	Directed Study	
SOCL 7230	Political Ecology of Global Capitalism	
SOCL 7267	Environment, Health, and Society	

HEALTH POLICY AND MANAGEMENT

Code	Title	Hours
Seminar		
PPUA 7247	Seminar in U.S. Health Policy and Management	4
Health Organization		
HRMG 6220	Health Organization Management	3
Business Elective		
Complete 3 semester hours from the following:		3
STRT 6220	Strategic Management for Healthcare Organizations	
SCHM 6223	Managing Healthcare Supply Chain Operations	
FINA 6220	Healthcare Finance	
Law Requirement		
LW 7335	Health Law	3

Electives		
Complete a minimum of 18 semester hours from the following:		18
ECON 7200	Topics in Applied Economics	
PPUA 6509	Techniques of Program Evaluation	
PPUA 7244	Comparative Public Policy and Administration	
PPUA 7240	Health Policy and Politics	
PPUA 7243	International Development Administration and Planning	
SOCL 7243	Sociology of Health and Illness	
SOCL 7267	Environment, Health, and Society	
SOCL 7287	Social Movements in Health	
PHTH 6000-9999 (public health elective, by advisement)		

URBAN AND REGIONAL POLICY

Code	Title	Hours
Seminar		
PPUA 7521		
Law Requirement		
LW 7655	Advancing Economic and Social Equity through Municipal Policy and Law	2
Electives		
Complete 24 semester hours from the following:		24
SOCL 7221	Globalization, Development, and Social Justice	
SOCL 7227	Race and Ethnic Relations	
SOCL 7235	Urban Sociology	
SOCL 7268	Globalization and the City	
CRIM 7230	Police and Society	
CRIM 7264	Immigration and Crime	
CRIM 7270	Crime and Community Context	
CRIM 7316	Advanced Topics in Methods	
ARCH 5210	Environmental Systems	
ECON 7210	Applied Microeconomic Policy Analysis	
ECON 7240	Workshop in Applied Econometrics	

ECON 7250	International Economic Development
ECON 7260	Urban Economic Systems
ECON 7261	Urban Economic Development
ECON 7262	Regional Economic Theory
ECON 7266	Economics of Government
ECON 7270	Economics of Law and Regulation
ECON 7740	Applied Econometrics 2
ECON 7763	Labor Market Analysis
LPSC 7215	Advanced Quantitative Techniques
POLS 7325	Contemporary Issues in Third World Development
POLS 7334	Social Networks
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context
PPUA 6204	Urban Development and Politics
PPUA 6509	Techniques of Program Evaluation
PPUA 6525	Institutions and Public Policy
PPUA 7237	Advanced Spatial Analysis of Urban Systems
PPUA 7976	Directed Study

Exam and Dissertation

Code	Title	Hours
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Exam Prep

Only needed for PhD students who have completed all course work but have not yet passed the comprehensive exam. Not repeatable.

LPSC 8960

Dissertation

Complete the following (repeatable) course twice:

LPSC 9990	Dissertation
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Dissertation Continuation

Following completion of two semesters of LPSC 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:

LPSC 9996	Dissertation Continuation
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Program Credit/GPA Requirements

55 total semester hours required

Minimum 3.500 GPA required

Public Policy, PhD—Advanced Entry

Website (<https://www.northeastern.edu/cssh/policyschool/law-public-policy-phd>)

Alan Clayton-Matthews, PhD

Graduate Program Director

a.clayton-matthews@northeastern.edu (a.clayton-matthews@northeastern.edu)

310 Renaissance Park
617.373.2909

Julie Switkes, Graduate Program Administrator, 617.373.2891, j.switkes@northeastern.edu (j.switkes@northeastern.edu)

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

This is an interdisciplinary social science program that combines several social science and legal theoretical perspectives with both quantitative and qualitative research methodologies. The wide-ranging faculty in the School of Public Policy and Urban Affairs can support students' research and dissertations in many fields—urban policy and regional economic development; sustainability and climate change; health policy; crime, social justice, and inequality; and the intersection of law and policy. Students work with faculty members to formulate a plan of study within their field of concentration by choosing courses from graduate programs offered in the policy school, the College of Social Sciences and Humanities, and in other colleges and schools at Northeastern University. Students also study a common body of knowledge developed in core courses on policy, research methods, and law. The school's research centers and faculty members' research projects provide opportunities for students to develop insight, experience, and synergies to help with their own research goals. The college and school offer a high level of support allowing all students to be devoted full-time to their studies and research.

Doctoral Degree Candidacy

Complete all required course work with a minimum 3.500 grade-point average (GPA) in the core courses and pass the comprehensive examinations. Students entering with a JD or master's degree must complete 47 semester hours.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

- Comprehensive examination
- Seminars
- Annual review
- PhD candidacy
- Dissertation committee
- Dissertation proposal
- Dissertation defense

Core Requirements

A grade of B+ or higher is required in each course.

Code	Title	Hours
Seminar		
POLS 7204	Seminar in Public Policy	4
PPUA 7976	Directed Study	1-4
Research and Statistical Methods		
INSH 6500	Statistical Analysis	4
INSH 6302	Qualitative Methods	4
INSH 6300	Research Methods in the Social Sciences	4
Advanced Methods		
Complete one of the following. An additional concentration elective may be taken in lieu of the advanced methods elective:		4
INSH 7500 or INSH 7600	Advanced Quantitative Analysis Advanced Methodological and Quantitative Techniques	

Experiential Research Residency

A PhD research residency or waiver is required.

Code	Title	Hours
PPUA 9980	Experiential PhD Research Residency	0

Concentrations

Complete one of the following concentrations:

- Sustainability and Resilience (p. 440)
- Health Policy and Management (p. 440)
- Urban and Regional Policy (p. 440)

SUSTAINABILITY AND RESILIENCE

Code	Title	Hours
Seminar		
PPUA 7511		
Law Requirement		
Complete 3 semester hours from the following:		3
LW 7329	Environmental Law	
Electives		
Complete 16 semester hours from the following:		16
CIVE 7110	Critical Infrastructure Resilience	
LPSC 7312	Cities, Sustainability, and Climate Change	
POLS 7333	Science, Technology, and Public Policy	
POLS 7341	Security and Resilience Policy	
POLS 7704	Critical Infrastructure Resilience	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
PPUA 7249	Urban Coastal Sustainability	
PPUA 7336	Social Capital and Resilience	
PPUA 7346	Resilient Cities	
PPUA 7976	Directed Study	
SOCL 7230	Political Ecology of Global Capitalism	
SOCL 7267	Environment, Health, and Society	

HEALTH POLICY AND MANAGEMENT

Code	Title	Hours
Seminar		
PPUA 7247	Seminar in U.S. Health Policy and Management	4
Health Organization		
HRMG 6220	Health Organization Management	3
Business Elective		
Complete 3 semester hours from the following:		3
STRT 6220	Strategic Management for Healthcare Organizations	
SCHM 6223	Managing Healthcare Supply Chain Operations	
FINA 6220	Healthcare Finance	
Law Requirement		
LW 7335	Health Law	3
Complete a minimum of 10 semester hours from the following:		10
ECON 7200	Topics in Applied Economics	

PPUA 6509	Techniques of Program Evaluation	
PPUA 7240	Health Policy and Politics	
PPUA 7243	International Development Administration and Planning	
PPUA 7244	Comparative Public Policy and Administration	
SOCL 7243	Sociology of Health and Illness	
SOCL 7267	Environment, Health, and Society	
SOCL 7287	Social Movements in Health	
PHTH 6000-9999 (public health elective, by advisement)		

URBAN AND REGIONAL POLICY

Code	Title	Hours
Seminar		
PPUA 7521		
Law Requirement		
LW 7655	Advancing Economic and Social Equity through Municipal Policy and Law	2
Electives		
Complete 16 semester hours from the following:		16
SOCL 7221	Globalization, Development, and Social Justice	
SOCL 7227	Race and Ethnic Relations	
SOCL 7235	Urban Sociology	
SOCL 7268	Globalization and the City	
CRIM 7230	Police and Society	
CRIM 7264	Immigration and Crime	
CRIM 7270	Crime and Community Context	
CRIM 7316	Advanced Topics in Methods	
ARCH 5210	Environmental Systems	
ECON 7210	Applied Microeconomic Policy Analysis	
ECON 7240	Workshop in Applied Econometrics	
ECON 7250	International Economic Development	
ECON 7260	Urban Economic Systems	
ECON 7261	Urban Economic Development	
ECON 7262	Regional Economic Theory	
ECON 7266	Economics of Government	
ECON 7270	Economics of Law and Regulation	
ECON 7740	Applied Econometrics 2	
ECON 7763	Labor Market Analysis	
LPSC 7215	Advanced Quantitative Techniques	
POLS 7325	Contemporary Issues in Third World Development	
POLS 7334	Social Networks <small>javascript:void(0)</small>	
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	
PPUA 6204	Urban Development and Politics	
PPUA 6509	Techniques of Program Evaluation	
PPUA 6525	Institutions and Public Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
PPUA 7976	Directed Study	

Exam and Dissertation

Code	Title	Hours
Exam Prep		
LPSC 8960		
Only required for students who have completed PhD course work but have yet to complete the comprehensive exam. Not repeatable.		
Dissertation		
Complete the following (repeatable) course twice:		
LPSC 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of LPSC 9990, registration in the following class is required in each semester (including summer if the dissertation is submitted in summer) until the dissertation is completed:		
LPSC 9996	Dissertation Continuation	

Program Credit/GPA Requirements

47 total semester hours required
 Minimum 3.500 GPA required

International Affairs, MA

Jeffrey Juris, PhD

Graduate Program Director
 j.juris@northeastern.edu
 201 Renaissance Park
 617.373.3857

Julie Switkes

Graduate Program Administrator
 j.switkes@northeastern.edu (j.switkes@northeastern.edu)
 310 Renaissance Park
 617.373.2891

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

We live in an increasingly interconnected global environment where people, goods, ideas, and conflicts traverse borders with rising frequency. Leaders in the activist, policy, and academic spheres must learn not only how to critically analyze these phenomena but also to envisage harnessing their constructive potential. The Master of Arts in International Affairs is an interdisciplinary graduate program dedicated to preparing tomorrow's global citizens.

A holistic approach to enhancing our understanding of the world must span the limits of any one academic field and embrace cross-disciplinary analytical competencies. Spanning several social sciences and humanities, our courses are taught by leading scholars who research democratization, gender, globalization, ethnic conflict and cooperation, human rights and international law, international relations, social activism, social justice, and many other topics. Through its core courses, its two thematic emphases—globalization, development, and social justice and international public policy—as well as global, policy, and methodological electives, this graduate program allows students to pursue a variety of themes.

The master's program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's

signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Political Economy		
Complete 8 semester hours from the following:		8
INTL 5200	Political Economy: Interdisciplinary Perspectives	
POLS 7387	Global Governance	
SOCL 7221	Globalization, Development, and Social Justice	
Social Science Methods		
Complete 4 semester hours from the following:		4
ECON 5110	Microeconomic Theory	
ECON 5120	Macroeconomic Theory	
ECON 7251	International Finance	
INSH 6300	Research Methods in the Social Sciences	
INSH 6500	Statistical Analysis	
LPSC 7305	Research and Statistical Methods	
POLS 7201	Research Design	
POLS 7202	Quantitative Techniques	
SOCL 7211	Research Methods	
SOCL 7220	Seminar in Qualitative Analysis	
Public Policy		
Complete 4 semester hours from the following:		4
PPUA 6502	Economic Institutions and Analysis	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6507	Institutional Leadership and the Public Manager	
PPUA 6509	Techniques of Program Evaluation	
PPUA 6551	Nonprofit Organizations and Social Change	
PPUA 6553	Nonprofit Financial Resource Development	

Electives

Selected in consultation with faculty advisor.

Code	Title	Hours
Complete 20 semester hours from the following:		20
LPSC 5000 to LPSC 7999		
PPUA 5000 to PPUA 7999		
CRIM 5000 to CRIM 7999 (by advisement only)		
ECON 5000 to ECON 7999 (by advisement only)		
ENGL 5000 to ENGL 7999 (by advisement only)		
HIST 5000 to HIST 7999 (by advisement only)		
POLS 5000 to POLS 7999 (by advisement only)		
SOCL 5000 to SOCL 7999 (by advisement only)		

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

36 total semester hours required (38 with optional co-op)
Minimum 3.000 GPA required

Public Administration, MPA

Christopher Bosso, PhD

Graduate Program Director
c.bosso@northeastern.edu
310 Renaissance Park
617.373.4398

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Master of Public Administration (MPA) is the management and leadership degree for those seeking to serve the public good. The program seeks to equip its students with skills in policy analysis, program evaluation, research methods, and written and verbal communications. Students have an opportunity to develop competencies in budgeting and human resources, organizational management and leadership, and the interplay between ethics and accountability in a diverse society. Throughout the degree program, students gain career-oriented experience through internships, small group projects, and other interactions with professionals in the field. These experiences are designed to enable the Northeastern MPA graduate to move into a wide array of public and nonprofit sector positions at the local, state, national, and international levels.

Mission Statement

The mission of the MPA program at Northeastern University is to serve the needs of the public affairs community, including students, working professionals, faculty, and researchers, by providing a practice-oriented and research-based graduate educational experience. The faculty pledges the best instruction available in a set of courses designed to integrate theoretical foundations with practical skills. The MPA program will prepare students to be effective in a dynamic and increasingly diverse

professional environment. We also commit ourselves to assisting students in every possible way to secure internships, postgraduate employment, and overall career advancement. Students, in turn, are expected to meet high levels of academic excellence combined with ethical and professional integrity. Committed to the ideals of public service and advancing the public interest, we seek students who share the same enthusiasm.

The MPA program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

The Northeastern University MPA program is nationally accredited by NASPAA.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

A cumulative 3.000 GPA is required for the core requirements.

Code	Title	Hours
Quantitative Techniques		
LPSC 7305	Research and Statistical Methods	4
or POLS 7202	Quantitative Techniques	
or INSH 6500	Statistical Analysis	
Analysis		
PPUA 6506	Techniques of Policy Analysis	4
PPUA 6502	Economic Institutions and Analysis	4
Administration and Management		
PPUA 6500	Principles of Public Administration	4
PPUA 6505	Public Budgeting and Financial Management	4
PPUA 6507	Institutional Leadership and the Public Manager	4
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4

Internship Requirement

An approved internship or waiver is required.

Code	Title	Hours
Internship Waived		
<i>Electives</i>		

Complete 12 semester hours from the Course List. (p. 434)	12
OR	
Internship Completed for Course Credit	
PPUA 6862 Internship with Research	4
<i>Electives</i>	
Complete 8 semester hours from the Course List. (p. 434)	8
OR	
Internship Completed Not for Course Credit	
PPUA 6861 Internship	0
<i>Electives</i>	
Complete 12 semester hours from the Course List. (p. 434)	12

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	2

Course List

Code	Title	Hours
LPSC 5000 to LPSC 7999		
PPUA 5000 to PPUA 7999		
CRIM 5000 to CRIM 7999 (by advisement only)		
ECON 5000 to ECON 7999 (by advisement only)		
ENGL 5000 to ENGL 7999 (by advisement only)		
HIST 5000 to HIST 7999 (by advisement only)		
POLS 5000 to POLS 7999 (by advisement only)		
SOCL 5000 to SOCL 7999 (by advisement only)		

Program Credit/GPA Requirements

40 total semester hours required (42 with optional co-op)
 Minimum 3.000 GPA

Public Policy, MPP

Christopher Bosso, PhD
 Graduate Program Director
 c.bosso@northeastern.edu
 310 Renaissance Park
 617.373.4398

Louis DaRos, Graduate Program Administrator, 617.373.5913,
 l.daros@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The Master of Public Policy (MPP) is the recognized industry standard for those seeking careers in public policy analysis and design. As such, a typical MPP degree emphasizes the analysis of data and other relevant information to enable graduates to assess public problems, develop appropriate policy responses, and evaluate program effectiveness. MPP graduates enter careers as policy analysts, researchers, consultants, program evaluators, and policymakers in a broad range of public and nonprofit settings, ranging from the local to the international, and in the private sector. At Northeastern, the MPP joins our long-established and nationally accredited Master of Public Administration (MPA) as well as our Master of Science in Urban and Regional Policy (MURP), Urban

Informatics, and International Affairs. As such, MPP students will be part of a larger School of Public Policy and Urban Affairs community of great intellectual and policy area diversity.

The MPP program offers an optional cooperative education experience (co-op) to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Methods, Statistics, and Applications Core		
LPSC 7305	Research and Statistical Methods	4
or POLS 7202	Quantitative Techniques	
or INSH 6500	Statistical Analysis	
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	4
or INSH 6300	Research Methods in the Social Sciences	
PPUA 6509	Techniques of Program Evaluation	4
or PPUA 6506	Techniques of Policy Analysis	
Policy Frameworks and Practice Core		
PPUA 6502	Economic Institutions and Analysis	4
LPSC 7311	Strategizing Public Policy	4
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Methods and Statistics Elective		
Complete 4 semester hours from the following:		4
LPSC 7215	Advanced Quantitative Techniques	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	

Internship Requirement

An approved internship or waiver is required.

Code	Title	Hours
Internship Waived		
<i>Electives</i>		
Complete 12 semester hours from the Course List. (p. 444)		12

OR		
Internship Completed for Course Credit		
PPUA 6862	Internship with Research	4
<i>Electives</i>		
Complete 8 semester hours from the Course List. (p. 444)		8
OR		
Internship Completed Not for Course Credit		
PPUA 6861	Internship	0
<i>Electives</i>		
Complete 12 semester hours from the Course List. (p. 444)		12

Specialization

No specialization is required. If you wish to pursue a specialization, please consult the program director. Specializations can include policy analysis and statistics, sustainability and climate change, urban informatics, law and policy, health policy, security and resilience.

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Course List

Code	Title	Hours
PPUA 5000 to PPUA 7999		
LPSC 5000 to LPSC 7999		
CRIM 5000 to CRIM 7999 (by advisement only)		
ECON 5000 to ECON 7999 (by advisement only)		
ENGL 5000 to 7999 (by advisement only)		
HIST 5000 to HIST 7999 (by advisement only)		
POLS 5000 to POLS 7999 (by advisement only)		
SOCL 5000 to SOCL 7999 (by advisement only)		

Program Credit/GPA Requirements

40 total semester hours required (42 with optional co-op)
Minimum 3.000 GPA required

Urban Informatics, MS

Daniel O'Brien, PhD

Graduate Program Director
d.obrien@northeastern.edu
310 Renaissance Park
617.373.6234

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The STEM-designated Master of Science in Urban Informatics (MSUI) degree couples comprehensive data analytics skills with an understanding of the big questions faced by cities in the 21st-century city. This cutting-edge program is built upon a unique cross-college

initiative, which offers comprehensive state-of-the-art training in the core skills of data analytics—including quantitative analysis, data mining, machine learning, and data visualization. Urban informatics students supplement training in these foundational skills with a specialized sequence of courses that address how data and technology are being used to tackle key social, infrastructural, and environmental challenges.

By combining a theoretically informed perspective of cities with advanced skills in accessing, managing, analyzing, and communicating insights from large complex, data sets, graduates are a part of the next wave of urban professionals ready to lead in the public, private, and nonprofit sectors. Given the continuous growth in urban data and technology, these professionals are essential to shaping the future of urban areas around the globe.

This program provides a uniquely integrated urban and informatics degree with a substantial experiential education component. The focus throughout is on practical application, and students have multiple opportunities to apply what they are learning.

The master's program offers an optional cooperative education experience ("co-op") to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Data Science Courses		
DA 5020 or DA 5030	Collecting, Storing, and Retrieving Data Introduction to Data Mining/Machine Learning	4
PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4
Methods and Applications		
PPUA 5262	Big Data for Cities	4
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
PPUA 5266	Urban Theory and Science	4
Analysis		
PPUA 7237 or PPUA 5261	Advanced Spatial Analysis of Urban Systems Dynamic Modeling for Environmental Decision Making	4

Research or Capstone

PPUA 6966 or PPUA 7673	Practicum Capstone in Public Policy and Urban Affairs	4
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Portfolio

PPUA 6410	Urban Informatics Portfolio	1
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Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

33 total semester hours required (35 with optional co-op)
Minimum 3.000 GPA required

Urban Planning and Policy, MS

The Master of Science in Urban Planning and Policy (MUPP) program trains leaders interested in building just and sustainable solutions to today’s critical urban problems, including challenges of affordable housing provision, equitable and sustainable economic growth, sustainable transportation, and climate change adaptation and mitigation. This innovative program combines the expertise in urban planning and policy analysis and data analytics of the School of Public Policy and Urban Affairs with expertise in physical planning, design, and data visualization at the School of Architecture. The core curriculum of the program provides students with a solid foundation in essential skills and concepts, including research design and statistics, economic analysis, legal foundations of urban planning and policy, and the history of urban development and urban planning. Students also have the opportunity to develop substantial expertise in a specialization area, including urban analytics, urban sustainability and resilience, urban design and physical planning, and urban development policy and planning.

The optional cooperative education experience (co-op) is available to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern’s signature co-op ecosystem provides qualified master’s students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

In addition to the co-op option, students in the MUPP program have opportunities to gain experience in the application of their knowledge and skills via internships, class projects, and a capstone research report. They graduate prepared for careers working for state and local government, federal agencies, community development corporations and other nonprofit organizations, research institutes, and as private-sector planning consultants.

This program is not accepting applicants until spring 2019.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Planning and Policy		
LPSC 5201		4
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	4
PPUA 6502	Economic Institutions and Analysis	4
SUEN 6340	Topics in Urban Environmental Design	4
Research Design		
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	4
Quantitative Techniques		
Students in the urban analytics focus area are encouraged to take PPUA 5301.		
Choose one from the following:		4
LPSC 7305 or INSH 6500 or POLS 7202 or PPUA 5301	Research and Statistical Methods Statistical Analysis Quantitative Techniques Introduction to Computational Statistics	

Focus Areas

Complete one of the following focus areas:

- Urban Design and Physical Planning (p. 67)
- Urban Analytics (p. 67)
- Sustainability and Resilience (p. 67)
- Urban Development Policy and Planning (p. 68)

URBAN DESIGN AND PHYSICAL PLANNING

Code	Title	Hours
Gateway Course		
ARCH 6340	Graduate Topics in Architecture	4
Tracks		
Complete one of the following tracks:		8
<i>Urban Design and Real Estate</i>		
ARCH 5310	Design Tactics and Operations	
ARCH 5530	Innovative Models in Real Estate Development and Design	
<i>Physical Planning and Design for Sustainable Urbanism</i>		
SUEN 7230	Urban Ecologies and Technologies 1	
SUEN 7240	Urban Ecologies and Technologies 2	
<i>Urban Experience Track</i>		
ARTG 5150	Information Visualization Principles and Practices	
ARTG		
Capstone		
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	6

URBAN ANALYTICS

Code	Title	Hours
Gateway Course		
PPUA 5262	Big Data for Cities	4
Required Courses		
ARTG 5150	Information Visualization Principles and Practices	4
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4

SUSTAINABILITY AND RESILIENCE

Code	Title	Hours
Gateway Course		
LPSC 7312	Cities, Sustainability, and Climate Change	4
or SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory	
Methods		
Complete one of the following:		4
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
SUEN 7230	Urban Ecologies and Technologies 1	
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Elective		
Complete one of the following:		4
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 7231	Transportation Policy	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7249	Urban Coastal Sustainability	
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites	
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	
SUEN 6220	Implementation and Visualization for Urban Environments 2	
SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory	
SUEN 6340	Topics in Urban Environmental Design	
SUEN 7230	Urban Ecologies and Technologies 1	
SUEN 7240	Urban Ecologies and Technologies 2	
SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments	

URBAN DEVELOPMENT POLICY AND PLANNING

Code	Title	Hours
Gateway Course		
Complete one of the following:		4
PPUA 7230	Housing Policy	

PPUA 7231	Transportation Policy	
PPUA 7233	Contemporary Community Development	
Methods		
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4
or PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers	
Capstone		
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Elective		
Complete one of the following:		4
PPUA 5270	Food Systems and Public Policy	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6530	State and Local Public Finance	
PPUA 6551	Nonprofit Organizations and Social Change	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7232	Immigration and Urban America	
PPUA 7233	Contemporary Community Development	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers	
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites	
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems	
SUEN 6340	Topics in Urban Environmental Design	

Electives

Code	Title	Hours
Complete two of the following:		
ARCH 5310	Design Tactics and Operations	8
ARCH 5530	Innovative Models in Real Estate Development and Design	
ARCH 6100	Graduate Skills Studio	
ARCH 6330	Seminar in Modern Architecture	
ARCH 6340	Graduate Topics in Architecture	
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5120	Research Methods for Design	
ARTG 5130	Visual Communication for Information Design	
ARTG 5330	Visualization Technologies 1	
ARTG 6330	Information Design Mapping Strategies	
DA 5020	Collecting, Storing, and Retrieving Data	
DA 5030	Introduction to Data Mining/Machine Learning	
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5270	Food Systems and Public Policy	

PPUA 5302	Information Design and Visual Analytics
PPUA 6506	Techniques of Policy Analysis
PPUA 6530	State and Local Public Finance
PPUA 6551	Nonprofit Organizations and Social Change
PPUA 7245	Education Policy in the United States
PPUA 7230	Housing Policy
PPUA 7231	Transportation Policy
PPUA 7232	Immigration and Urban America
PPUA 7233	Contemporary Community Development
PPUA 7234	Land Use and Urban Growth Policy
PPUA 7236	Introduction to Real Estate Development for Urban Policy Makers
PPUA 7237	Advanced Spatial Analysis of Urban Systems
PPUA 7249	Urban Coastal Sustainability
SUEN 6110	Graduate Studio 1: Sustainable Urban Sites
SUEN 6120	Graduate Studio 2: Sustainable Urban Systems
SUEN 6210	Implementation and Visualization for Urban Environments 1
SUEN 6220	Implementation and Visualization for Urban Environments 2
SUEN 6310	Cities, Nature, and Design in Contemporary History and Theory
SUEN 6340	Topics in Urban Environmental Design
SUEN 7230	Urban Ecologies and Technologies 1
SUEN 7240	Urban Ecologies and Technologies 2
SUEN 7320	Pro-Seminar: Issues in Designed Urban Environments

Optional Co-op Experience

Code	Title	Hours
Requires two consecutive semesters of Co-op Work Experience and Experiential Integration:		2
PPUA 6964 and INSH 6864	Co-op Work Experience and Experiential Integration	

Program Credit/GPA Requirements

48 total semester hours required (50 with optional co-op)
Minimum 3.000 GPA required

Urban and Regional Policy, MS

Gavin Shatkin, PhD

Graduate Program Director
g.shatkin@northeastern.edu (g.shatkin@northeastern.edu)
310 Renaissance Park
617.373.3074

Julie Switkes

Graduate Program Administrator
j.switkes@northeastern.edu
310 Renaissance Park
617.373.2891

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The Master of Science in Urban and Regional Policy (MURP) seeks to equip students with the skills to solve today's critical urban problems through the use of policy analysis, research, and strategic action. Many of the major issues that societies face today—issues of climate change and sustainability, equity and social justice, and economic growth—have their roots in urban growth and change. Solutions to these issues require a multisystem approach that coordinates interventions in economic, environmental, sociocultural, political, spatial, and infrastructural systems in order to maximize impact. For example, revitalizing a distressed community requires connecting it to economic opportunity through transportation and economic development interventions, providing good-quality affordable housing, fostering social interaction through the creation of public space, encouraging the development of strong social institutions, and dealing with environmental concerns.

The MURP degree marries training in theories and frameworks of urban development with an understanding of urban politics and the way in which different policy strategies evolve through the interplay between branches and levels of government. Students have an opportunity to learn skills of policy analysis, economic analysis, quantitative and qualitative research, and oral and written communication. Moreover, students have opportunities to gain experience in the application of their knowledge and skills through internships, co-op, class projects, and a capstone research report. Students graduate and enter the workforce with a unique set of perspectives, skills, experiences, and professional connections. Many go on to careers working for state and local government, federal agencies, community development corporations and other nonprofit organizations, research institutes, and as private-sector policy consultants.

The optional cooperative education experience ("co-op") is available to eligible students. Cooperative education is central to both the Northeastern experience and to the College of Social Sciences and Humanities experiential liberal arts framework. Northeastern's signature co-op ecosystem provides qualified master's students with six-month work experiences in businesses, nonprofits, and government agencies in Boston and across the United States. Graduate students take their work from campus learning spaces, apply their knowledge outside of the classroom, and then bring knowledge and skills gained in community learning spaces back to our campus learning spaces during the cocurricular experiential integration course.

The program is not accepting applicants for Spring 2019.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Quantitative Techniques		
LPSC 7305 or POLS 7202 or INSH 6500	Research and Statistical Methods Quantitative Techniques Statistical Analysis	4
Policy		
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	4
PPUA 6204	Urban Development and Politics	4
PPUA 6502	Economic Institutions and Analysis	4

Evaluation and Research

PPUA 6205	Research Design and Methodology in Urban and Regional Policy	4
or INSH 6300	Research Methods in the Social Sciences	

Research Toolkits

Complete 4 semester hours from the following. An additional elective from the Course List may be taken in lieu of Research Toolkits. 4

PPUA 6206 to PPUA 6214

PPUA 6216 Research Toolkit for Urban and Regional Policy: Grant Writing

Capstone

PPUA 7673	Capstone in Public Policy and Urban Affairs	4
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Internship Requirement

An approved internship or waiver is required.

Code	Title	Hours
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Internship Waived*Electives*

Complete 20 semester hours from the Course List. (p. 448) 20

OR

Internship Completed for Course Credit

PPUA 6862	Internship with Research	4
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Electives

Complete 16 semester hours from the Course List. (p. 448) 16

OR

Internship Completed Not for Course Credit

PPUA 6861	Internship	0
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Electives

Complete 20 semester hours from the Course List. (p. 448) 20

Optional Co-op Experience

Code	Title	Hours
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Requires two consecutive semesters of Co-op Work Experience and Experiential Integration: 2

PPUA 6964 Co-op Work Experience and INSH 6864 and Experiential Integration

Course List

Code	Title	Hours
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LPSC 5000 to LPSC 7999

PPUA 5000 to PPU 7999

CRIM 5000 to CRIM 7999 (by advisement only)

ECON 5000 to ECON 7999 (by advisement only)

ENGL 5000 to ENGL 7999 (by advisement only)

HIST 5000 to HIST 7999 (by advisement only)

POLS 5000 to POLS 7999 (by advisement only)

SOCL 5000 to SOCL 7999 (by advisement only)

Program Credit/GPA Requirements

48 total semester hours required (50 with optional co-op)

Minimum 3.000 GPA required

Environmental Science and Policy, MS

The Master of Science in Environmental Science and Policy program emphasizes a broadly interdisciplinary and synthetic approach that integrates knowledge in the environmental sciences (conservation biology, climate change, fisheries science, ecosystem function, biodiversity, restoration ecology) with the social sciences (policy, economics, sociology, political science, and development) and humanities (environmental history, philosophy, and ethics). The goal of the program is to equip professionals with substantive breadth in knowledge and skills at the intersection of environmental science and policy. The program focuses on training students to think critically about the underlying causes of environmental problems and understanding the reciprocal relationships between coupled human-natural ecosystems and the interconnections between social and technological innovations. The program explores practical approaches and potential solutions that decision makers need to evaluate in policy debates related to promoting environmental sustainability.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
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Seminars

PPUA 6101	Environmental Science and Policy Seminar 1	4
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ENVR 6102	Environmental Science and Policy Seminar 2	4
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Skills Courses

Complete 6-8 semester hours from the following. At least one course needs to be taken from the College of Science Skills Course List and one course from the College of Social Sciences and Humanities Skills Course List. 6-8

College of Science Skills Course List

EEMB 5130	Ecological Dynamics	
EEMB 5522	Experimental Design Marine Ecology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
ENVR 5400	Marine Science Policy and Ethics	
ENVR 6500	Biostatistics	

College of Social Sciences and Humanities Skills Course List

LPSC 6313	Economic Analysis for Law, Policy, and Planning	
LPSC 7215	Advanced Quantitative Techniques	
LPSC 7305	Research and Statistical Methods	
LPSC 7311	Strategizing Public Policy	
POLS 7201	Research Design	
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5301	Introduction to Computational Statistics	

PPUA 6205	Research Design and Methodology in Urban and Regional Policy
PPUA 6207	Research Toolkit for Urban and Regional Policy: Survey Techniques
PPUA 6209	Research Toolkit for Urban and Regional Policy: Working with Datasets
PPUA 6210	Research Toolkit for Urban and Regional Policy: Cost/Benefit Analysis
PPUA 6212	Research Toolkit for Urban and Regional Policy: Project Management
PPUA 6213	Research Toolkit for Urban and Regional Policy: Data Visualization
PPUA 6216	Research Toolkit for Urban and Regional Policy: Grant Writing
PPUA 6502	Economic Institutions and Analysis
PPUA 6506	Techniques of Policy Analysis
PPUA 6509	Techniques of Program Evaluation
PPUA 7237	Advanced Spatial Analysis of Urban Systems
SOCL 7211	Research Methods

PPUA 5390	Special Topics in Public Policy and Urban Affairs
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context
PPUA 6204	Urban Development and Politics
PPUA 6505	Public Budgeting and Financial Management
PPUA 6506	Techniques of Policy Analysis
PPUA 6522	Administrative Ethics and Public Management
PPUA 6551	Nonprofit Organizations and Social Change
PPUA 6552	The Nonprofit Sector in Civil Society and Public Affairs
PPUA 6553	Nonprofit Financial Resource Development
PPUA 6862	Internship with Research
PPUA 6966	Practicum
PPUA 7225	The Open Classroom: Public Debates on Public Policy
PPUA 7230	Housing Policy
PPUA 7234	Land Use and Urban Growth Policy
PPUA 7239	Problems in Metropolitan Policymaking
PPUA 7249	Urban Coastal Sustainability
PPUA 7231	Transportation Policy
PPUA 7336	Social Capital and Resilience
PPUA 7346	Resilient Cities
PPUA 7673	Capstone in Public Policy and Urban Affairs
SOCL 7211	Research Methods
SOCL 7230	Political Ecology of Global Capitalism
SOCL 7235	Urban Sociology
SOCL 7243	Sociology of Health and Illness
SOCL 7257	Contemporary Issues in Sociology
SOCL 7267	Environment, Health, and Society
SOCL 7287	Social Movements in Health

Electives

Any skills course not taken to fulfill the skills courses requirement can be taken as an elective. Students must take three electives from the College of Science and three from the College of Social Science and Humanities. Students may petition to enroll in other relevant graduate courses offered by other schools at Northeastern University.

COLLEGE OF SCIENCE ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
EEMB 5518	Ocean and Coastal Processes	
EEMB 5528	Marine Conservation Biology	
EEMB 5536	Ocean and Coastal Sustainability	
EEMB 5548	Sociobiology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

COLLEGE OF SOCIAL SCIENCES AND HUMANITIES ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
LPSC 7311	Strategizing Public Policy	
LPSC 7312	Cities, Sustainability, and Climate Change	
PHTH 5214	Environmental Health	
PHTH 5230	Global Health	
PHTH 5440	Community-Based Participatory Research: Environmental Health	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5264	Energy Transitions and Climate Resilience: Technology, Policy, and Social Change	
PPUA 5266	Urban Theory and Science	
PPUA 5270	Food Systems and Public Policy	
PPUA 5275	Philanthropy and Civil Society	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

Note: Typically, students will complete 12–16 semester hours of seminar and skills courses and 18–24 semester hours of electives.

36 total semester hours required
Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Infrastructure Resilience, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Infrastructure Resilience with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Infrastructure Resilience in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved infrastructure resilience technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Infrastructure Resilience		
CIVE 7110	Critical Infrastructure Resilience	4
Environmental Systems Modeling		
Complete 4 semester hours from the following: 4		
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Agent-based Modeling)	
Economics		
Complete 4 semester hours from the following: 4		
ECON 7210	Applied Microeconomic Policy Analysis	

LPSC 6313	Economic Analysis for Law, Policy, and Planning
Public Policy and Analysis	
Complete 4 semester hours from the following: 4	
LPSC 7311	Strategizing Public Policy
PPUA 6506	Techniques of Policy Analysis
PPUA 6509	Techniques of Program Evaluation
Statistics	
Complete 4 semester hours from the following: 4	
CIVE 7100	Time Series and Geospatial Data Sciences
IE 6200	Engineering Probability and Statistics
IE 7280	Statistical Methods in Engineering
LPSC 7215	Advanced Quantitative Techniques

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the infrastructure course list below. 12		

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Infrastructure course list below. 8		

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Infrastructure course list below. 4		

Infrastructure Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
EMGT 6225	Economic Decision Making	
ENVR 5260	Geographical Information Systems	
IA 5250	Decision Making for Critical Infrastructure	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
IE 7290	Reliability Analysis and Risk Assessment	
ME 5645	Environmental Issues in Manufacturing and Product Use	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	

PPUA 7234	Land Use and Urban Growth Policy
PPUA 7237	Advanced Spatial Analysis of Urban Systems
PPUA 7239	Problems in Metropolitan Policymaking
PPUA 7240	Health Policy and Politics

Program Credit/GPA Requirements

32 total semester hours required

Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Energy & Environment, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Energy and Environment with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Energy and Environment in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved energy and environment technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Energy and Environment		
CIVE 7272	Air Quality Management	4
or ENGR 5670	Sustainable Energy: Materials, Conversion, Storage, and Usage	
Environmental Systems Modeling		
Complete 4 semester hours from the following:		4
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Agent-Based Modeling)	
Economics		
Complete 4 semester hours from the following:		4
PPUA 5260	Ecological Economics	
ECON 7210	Applied Microeconomic Policy Analysis	
LPSC 6313	Economic Analysis for Law, Policy, and Planning	
Public Policy and Analysis		
Complete 4 semester hours from the following:		4
LPSC 7311	Strategizing Public Policy	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6509	Techniques of Program Evaluation	
Statistics		
Complete 4 semester hours from the following:		4
CIVE 7100	Time Series and Geospatial Data Sciences	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
LPSC 7215	Advanced Quantitative Techniques	
Options		
Complete one of the following options:		
COURSE WORK OPTION		
Code	Title	Hours
Complete 12 semester hours from the Energy and Environment Course List below.		12
REPORT OPTION		
Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Energy and Environment Course List below.		8
THESIS OPTION		
Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Energy and Environment Course List below.		4

Energy and Environment Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5300	Environmental Engineering Laboratory	
CIVE 7252	Water Engineering, Resources, and Energy Recovery	
CIVE 7261	Surface Water Quality Modeling	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Hydraulic Modeling)	
EMGT 6225	Economic Decision Making	
ENVR 5210	Environmental Planning	
ENVR 5260	Geographical Information Systems	
ME 5645	Environmental Issues in Manufacturing and Product Use	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Public Policy Analysis, Graduate Certificate

Christopher Bosso, PhD

Graduate Program Director
c.bosso@northeastern.edu
310 Renaissance Park
617.373.4398

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Graduate Certificate in Public Policy Analysis seeks to provide current Northeastern students in a variety of graduate programs outside of the Master of Public Policy program with the tools necessary to analyze and to shape public policy at the local, state, and national levels. Students have an opportunity to gain an understanding of the political and legal processes of policymaking, develop skills central to conducting research on policy questions, and learn techniques for evaluating the effectiveness of competing policies.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Core Requirements*

Code	Title	Hours
Analysis Methods and Skills		
Complete 8 semester hours from the following:		8
PPUA 6502	Economic Institutions and Analysis	
LPSC 7311	Strategizing Public Policy	
or PPUA 6506	Techniques of Policy Analysis	
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5302	Information Design and Visual Analytics	
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	
PPUA 6509	Techniques of Program Evaluation	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
Policy		
Complete 4 semester hours from the following:		4
PPUA 5264	Energy Transitions and Climate Resilience: Technology, Policy, and Social Change	
PPUA 5270	Food Systems and Public Policy	
PPUA 6525	Institutions and Public Policy	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7232	Immigration and Urban America	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7239	Problems in Metropolitan Policymaking	
PPUA 7240	Health Policy and Politics	
PPUA 7244	Comparative Public Policy and Administration	
PPUA 7245	Education Policy in the United States	

* *Students cannot double count required degree courses for the certificate.*

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Nonprofit Sector, Philanthropy, and Social Change, Graduate Certificate

Christopher Bosso, PhD

Graduate Program Director
c.bosso@northeastern.edu
310 Renaissance Park

617.373.4398

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Graduate Certificate in Nonprofit Sector, Philanthropy, and Social Change is a response to recent developments in social change theory, practice, and funding that are placing new demands and expectations on social change actors in the nonprofit, public, and private sectors, including nonprofit leaders, philanthropists, policymakers, and corporate social responsibility managers. These developments include the emergence of hybrid, cross-sector business models and new intermediary mechanisms for channeling the flow of capital into social change; new expectations and standards for performance measurement, transparency, and accountability; more sophisticated use of data and technology to support decision making, evaluation, and continual improvement; decreased public funding for traditional nonprofit activities; and the emergence of social media as a vehicle for mobilizing people and resources. The certificate enables social change professionals in all sectors to respond to these changes more effectively and will distinguish itself from other nonprofit certificate programs by focusing on the relationship between social program implementation and funding.

The certificate is a professionally oriented, application-based program for students seeking leadership positions in nonprofit organizations or in a public agency that deals extensively with nonprofits. The curriculum is designed to address the distinctive features and practices of the nonprofit sector and emphasizes management techniques helpful to nonprofit leaders.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose GPA falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
PPUA 6551	Nonprofit Organizations and Social Change	4
PPUA 6552	The Nonprofit Sector in Civil Society and Public Affairs	4

Elective

Complete 4 semester hours from the following. Courses outside this list may be taken as electives with approval of the graduate program director.

Code	Title	Hours
PPUA 5275	Philanthropy and Civil Society	4
PPUA 6509	Techniques of Program Evaluation	4
PPUA 6522	Administrative Ethics and Public Management	4

PPUA 6523 Accountability, Performance Measurement, and Contracting in the Public Sector

PPUA 6553 Nonprofit Financial Resource Development

PPUA 6554 International NGOs and Transnational Activism

PPUA 6966 Practicum

PPUA 7243 International Development Administration and Planning

PPUA 7976 Directed Study

Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Urban Analytics, Graduate Certificate**Daniel O'Brien, PhD**

Graduate Program Director
d.obrien@northeastern.edu
310 Renaissance Park
617.373.6234

Louis DaRos

Graduate Program Administrator
l.daros@northeastern.edu
310 Renaissance Park
617.373.5913

CSSH Graduate General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

With 75 percent of the world's population projected to be living in cities by 2050, the need for professionals in urban planning and related careers will only increase. The Graduate Certificate in Urban Analytics seeks to prepare students outside of the Master of Science in Urban Informatics program to manage the progressively complex issues involved with rapidly expanding data and technological resources in cities. As Claire Lane of the City of Boston recently noted, "The blueprints for great cities are increasingly anchored in big data, expressed in GIS [Geographic Information Systems] and codified in coherent policy." Successful graduates with an urban analytics certificate have skills in each of these areas, which prepares them to be professionals ready to shape the future of cities across the globe.

Students are trained with the practical and theoretical knowledge necessary to understand the intricacies of interconnected urban systems and to analyze how these systems work together to create sustainable, resilient, and just cities. The curriculum emphasizes the expertise needed to bridge emerging technological capacities and traditional policymaking processes. Students cultivate applied skills in visual presentation, analysis, and modeling of new data sets—all of which helps to inform investment and policymaking. Inspired by Northeastern's leadership in experiential education, students use Boston and cities around the world as learning labs.

ACADEMIC STANDING/PROGRESS

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled

that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
PPUA 5262	Big Data for Cities	4
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	4

Elective

Code	Title	Hours
Complete 4 semester hours from the following:		4
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5266	Urban Theory and Science	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Urban Studies, Graduate Certificate

Gavin Shatkin, PhD

Graduate Program Director
g.shatkin@northeastern.edu
310 Renaissance Park
617.373.3074

Julie Switkes

Graduate Program Administrator
j.switkes@northeastern.edu
310 Renaissance Park
617.373.2891

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Graduate Certificate in Urban Studies provides a foundation in the fundamentals of urban and regional policy theory for students outside the Master of Science in Urban and Regional Policy degree. It also allows students to pursue course work in a range of areas of concentration, including housing and community development, urban environmental sustainability, economic development, international comparative urban policy, and transportation. The certificate is not a stand-alone program but is anchored by and incorporated into participating graduate programs.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose grade-point average (GPA) falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	4
PPUA 7673	Capstone in Public Policy and Urban Affairs	4

Elective

Code	Title	Hours
Complete 4 semester hours in the following range (selected by advisement):		4
PPUA 5000 to PPUA 7999		

Program Credit/GPA Requirements

12 total semester hours required
Minimum 3.000 GPA required

Law and Public Policy, JD/MS

Christopher Bosso, PhD

Graduate Program Director
c.bosso@northeastern.edu
310 Renaissance Park
617.373.4398

Louis DaRos, Graduate Program Administrator, 617.373.5913,
l.daros@northeastern.edu

CSSH Graduate Programs General Regulations (http://www.northeastern.edu/cssh/graduate/current_students)

The JD/MS in Law and Public Policy (LPP) is a joint program with and open only to students in the Northeastern University School of Law designed to equip graduates with a unique blend of skills for navigating a complex and rapidly changing policy landscape. The program builds on students' legal training with a compelling blend of skills in applied public policy analysis, policy design, and strategic policy formation. Students also gain career-relevant experience through internships, small group capstone projects, and other interactions with professionals in the field. All are part of a learning process designed to enable the Northeastern law and public policy graduates to navigate, and to redefine, diverse policy areas.

Ideally, students apply to the joint LPP simultaneously. Those who apply and are admitted complete the MS in LPP after completing the first year in the School of Law. Applicants will also be considered once enrolled in the JD, provided the student applies for entry to the MS in LPP in the fall of year two or the fall of year three of the JD program. In these cases, permission of the School of Law is required.

Please note that the School of Public Policy and Urban Affairs offers approximately 20 MS graduate courses in the fall and spring semesters.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Analysis and Statistical Methods		
PPUA 6502	Economic Institutions and Analysis	4
LPSC 7305	Research and Statistical Methods	4
or POLS 7202	Quantitative Techniques	
or INSH 6500	Statistical Analysis	
Policy Courses		
LPSC 7311	Strategizing Public Policy	4
PPUA 7673	Capstone in Public Policy and Urban Affairs	4
Evaluation and Research		
PPUA 6509	Techniques of Program Evaluation	4

Electives

Code	Title	Hours
Complete 8 semester hours from the following:		8
LPSC 5000 to LPSC 7999		
PPUA 5000 to PPU 7999		
CRIM 5000 to CRIM 7999 (by advisement)		
ECON 5000 to ECON 7999 (by advisement)		
ENGL 5000 to ENGL 7999 (by advisement)		
HIST 5000 to HIST 7999 (by advisement)		
POLS 5000 to POLS 7999 (by advisement)		
SOCL 5000 to SOCL 7999 (by advisement)		

Law Requirements

Code	Title	Hours
Complete 9 semester hours from the following subject areas:		9
LW, LAW		

Program Credit/GPA Requirements

37 total semester hours required
 Minimum 3.000 GPA required

Sociology

Website (<http://www.northeastern.edu/cssh/socant>)

Matthew Hunt, PhD

Professor and Chair

Liza Weinstein, PhD

Associate Professor and Graduate Program Director

960 Renaissance Park
 617.373.2686
 617.373.2688 (fax)
gradsoc@northeastern.edu

Graduate Programs Contact

Pamela Simmons, Graduate Program Administrator,
p.simmons@northeastern.edu (j.collins@northeastern.edu)

CSSH Graduate Programs General Regulations (<https://www.northeastern.edu/cssh/socant/wp-content/uploads/sites/19/2014/11/GENREGS.pdf>)

Uncertainty about the economy, healthcare, and the labor market. Ethnic conflicts in an era of rapid globalization. Concern for the environment.

Shifting gender arrangements as work and family come into conflict. Violence in school and even in houses of worship.

Never has there been a greater need for sociological research focused on the problems and issues of our time.

The Department of Sociology and Anthropology at Northeastern University offers a PhD degree in sociology within a flexible program attractive to students interested in both academic and nonacademic careers. Students pursuing the PhD degree earn an MA degree en route to completing the doctorate, unless they earned the MA in sociology elsewhere. The program seeks to provide students with the theoretical foundation and research skills needed to engage in a career in teaching and research, in the public sector, or in industry. Thirty-two faculty members bring a wide range of substantive interests, organized around four specialization areas: the sociology of gender; globalization; environment and health; and urban sociology. Apart from these formal areas of concentration, the department has extraordinary strengths in inequality and social movements.

Our faculty have won numerous prizes for excellence in the classroom, and many have also played leadership roles in establishing prestigious centers and interdisciplinary programs on Northeastern's campus.

The Department of Sociology and Anthropology is a founding unit of Northeastern's School of Public Policy and Urban Affairs, which is dedicated to providing advanced research opportunities in a multidisciplinary environment. The department also maintains strong ties with the Brudnick Center for the Study of Conflict and Violence; the Women's, Gender, and Sexuality Studies program; the Kitty and Michael Dukakis Center for Urban and Regional Policy; the Northeastern Environmental Justice Research Collaborative; the Social Science Environmental Health Research Institute; and PhD in Public Policy program.

Programs

Doctor of Philosophy

- Sociology (p. 455)
- Sociology—Advanced Entry (p. 457)

Sociology, PhD

The PhD program is designed to attract students who wish to develop a broad base of sociological knowledge, such as would equip students to embark on academic careers in leading institutions of higher education. The PhD program boasts a wide array of curricular strengths and diverse methodological offerings, all of which draw upon the department's emphasis on the study of social inequalities along lines of race, class, and gender. Faculty expertise ranges widely from domestic U.S. concerns to issues that affect groups, regions, and societies on a global scale.

The PhD program is organized around four key areas of specialization:

- Globalization (<http://www.northeastern.edu/cssh/socant/graduate/globalization>)
- Urban Sociology (<http://www.northeastern.edu/cssh/socant/graduate/urban-sociology>)
- Sociology of Gender (<http://www.northeastern.edu/cssh/socant/graduate/sociology-of-gender>)
- Environment and Health (<http://www.northeastern.edu/cssh/socant/graduate/environment-and-health>)

In addition to the graduate courses offered in the areas of specialization, the program offers a strong foundation in both theory (classical and

contemporary) and methods (quantitative and qualitative). Reflecting the program's distinctive emphasis on social inequalities, students are required to select a core elective in this field, choosing from a list of approved courses maintained by the department (e.g., Social Psychology of Stratification (SOCL 7263) and Class Structure and Social Inequality (SOCL 7252)). As students complete their core requirements, they also work closely with individual faculty members to advance their work within one of the department's standing areas of specialization. Students also have the right to petition to construct their own areas of specialization (pending departmental approval) and have completed area examinations in a host of subfields. Among these are environmental justice, political economy of global capitalism, theoretical criminology, feminist theory, political sociology, social psychology, sociology of violence, and immigration, among many others.

The PhD program is designed to admit relatively small numbers of graduate students each year, which affords students the opportunity to forge close working relationships with the faculty. Our faculty and graduate students work together in a number of interdisciplinary research projects, programs, and centers, including the Social Science Environmental Health Research Institute (<http://www.northeastern.edu/environmentalhealth>); the Brudnick Center on Violence and Conflict (<http://www.northeastern.edu/brudnickcenter>); the Dukakis Center for Urban and Regional Policy (<http://www.northeastern.edu/dukakiscenter>); the (<http://catalog.northeastern.edu/graduate/social-sciences-humanities/sociology/sociology-phd/Institute%20on%20Urban%20Health%20Research%20and%20Practice>) Institute on Urban Health Research and Practice (<http://www.northeastern.edu/iuhrp>); the Environmental Justice Research Collaborative (<http://www.northeastern.edu/nejrc>); the Institute on Race and Justice (<http://www.northeastern.edu/irj>); and the Women's, Gender, and Sexuality Studies Program (<https://www.northeastern.edu/cssh/wgss>). Many of the faculty in the Department of Sociology and Anthropology have additional interests and are affiliated with other departments on campus, including environmental studies; law and public policy; Latino, Latin American, and Caribbean studies; African-American studies; international affairs, Jewish studies; and criminal justice. Students who wish to work with faculty in other disciplines are encouraged to enlist the aid of the sociology graduate director or their advisors in contacting individual faculty members.

Admissions

Students interested in the PhD apply directly to that program. Students admitted without a master's degree earn the MA in sociology en route once PhD course work is completed. Please note that all applicants for the doctoral program are required to submit a writing sample that should consist of written materials that demonstrate their capacity for scholarship at the doctoral level. (Copies of several course or term papers or a copy of a master's thesis or paper are appropriate.)

Theory Examination

Students entering the graduate program must take a theory qualifying examination at the conclusion of their first year of study during the spring semester. The theory qualifying examination is a standard exam taken by all students in the same cohort. The exam is graded on a pass/fail basis. Students who fail the examination may take it a second time but will not be allowed to enroll for course work beyond the 30-semester-hour MA requirement or their first year of PhD residence (whichever case applies) until successfully completing the qualifying exam. Students who fail the examination on their second attempt will be asked to leave the program. In the latter case, a student may petition the graduate committee for a review of the student's record and performance in the program.

Course Requirements

As prerequisites, all doctoral candidates are expected to have completed the core methodology and theory requirements for the Master of Arts in Sociology:

- (SOCL 7210)
- Research Methods (SOCL 7211)
- Foundations of Social Theory 1 (SOCL 7200)
- Foundations of Social Theory 2 (SOCL 7201)

Doctoral candidates are also required to complete two advanced methods classes from a list of approved courses maintained by the department. Finally, doctoral students must take a course in the area of social inequality, choosing from a list of approved courses maintained by the department.

Students entering with a bachelor's degree complete 60 semester hours. Students entering with a master's degree complete a minimum of 28 semester hours beyond the master's degree.

Degree Candidacy

To enter into degree candidacy, the student must have earned a Master of Arts degree or its departmental semester-hour equivalent, passed the qualifying examination, established a graduate committee of three faculty members from the sociology department, and successfully completed the candidacy examination.

Once students complete doctoral course work, they will register for the following courses in the following sequence:

- Exam Preparation—Doctoral (SOCL 8960) The semester following completion of course work, students will register for Exam Preparation. During this semester, students should complete their first comprehensive exam. Students only register for Exam Preparation once. Even if a student is unable to complete their first comprehensive exam during this time frame, they will not register for Exam Preparation again.
- Research (SOCL 9986) The next semester, students will register for Research, during which their second comprehensive examination should be completed. Upon completion of both comprehensive examinations, students will have achieved PhD degree candidacy, be certified by the graduate school, and will have five years to complete the dissertation.
- Dissertation (SOCL 9990) Upon achieving PhD degree candidacy, students will register for two consecutive semesters of Dissertation, during which they should complete and defend their dissertation proposal.
- Dissertation Continuation (SOCL 9996) Following the successful defense of their dissertation proposal, students will register for Dissertation Continuation for their remaining semesters until the dissertation is approved by the graduate school and submitted electronically to Proquest. Students do not have to register for Dissertation Continuation during the summer unless that is when their dissertation defense occurs.

Program Requirements

Bachelor's Degree Entrance

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination
Annual review

Two field comprehensive examinations
 Dissertation committee
 Dissertation proposal
 Dissertation defense

Core Requirements

Code	Title	Hours
Core Courses		
SOCL 7200	Foundations of Social Theory 1	4
SOCL 7201	Foundations of Social Theory 2	4
INSH 6500	Statistical Analysis	4
SOCL 7211	Research Methods	4
or INSH 6300	Research Methods in the Social Sciences	
SOCL 7263	Social Psychology of Stratification	4
Advanced Methods		
Complete 8 semester hours from the following:		8
INSH 7400	Quantitative Analysis	
SOCL 7220	Seminar in Qualitative Analysis	
or INSH 6302	Qualitative Methods	
CRIM 7316	Advanced Topics in Methods	
PHTH 6320	Qualitative Methods in Health and Illness	
PPUA 6509	Techniques of Program Evaluation	

Electives

Code	Title	Hours
Complete 32 semester hours in the following subject area:		32
SOCL		

Dissertation

Code	Title	Hours
Exam Preparation		
Required for students who must maintain full-time status while completing comprehensive exam.		
SOCL 8960	Exam Preparation—Doctoral	
Research		
SOCL 9986	Research	
Dissertation		
Complete the following (repeatable) course twice:		
SOCL 9990	Dissertation	
Dissertation Continuation		
Following completion of two semesters of SOCL 9990, registration in the following class is required in each semester (excluding summers) until the dissertation is completed:		
SOCL 9996	Dissertation Continuation	

Program Credit/GPA Requirements

60 total semester hours required
 Minimum 3.000 GPA required

Sociology, PhD—Advanced Entry

The PhD program is designed to attract students who wish to develop a broad base of sociological knowledge, such as would equip students to embark on academic careers in leading institutions of higher education. The PhD program boasts a wide array of curricular strengths and diverse

methodological offerings, all of which draw upon the department's emphasis on the study of social inequalities along lines of race, class, and gender. Faculty expertise ranges widely from domestic U.S. concerns to issues that affect groups, regions, and societies on a global scale.

The PhD program is organized around four key areas of specialization.

- Globalization (<http://www.northeastern.edu/cssh/socant/graduate/globalization>)
- Urban Sociology (<http://www.northeastern.edu/cssh/socant/graduate/urban-sociology>)
- Sociology of Gender (<http://www.northeastern.edu/cssh/socant/graduate/sociology-of-gender>)
- Environment and Health (<http://www.northeastern.edu/cssh/socant/graduate/environment-and-health>)

In addition to the graduate courses offered in the areas of specialization, the program provides a strong foundation in both theory (classical and contemporary) and methods (quantitative and qualitative). Reflecting the program's distinctive emphasis on social inequalities, students are required to select a core elective in this field, choosing from a list of approved courses maintained by the department (e.g., a course on the social psychology of stratification or a seminar in social inequality). As students complete their core requirements, they also work closely with individual faculty members to advance their work within one of the department's standing areas of concentration. Students also have the right to petition to construct their own areas of specialization (pending departmental approval) and have completed area examinations in a host of subfields. Among these are environmental justice, political economy of global capitalism, theoretical criminology, feminist theory, political sociology, social psychology, sociology of violence, and immigration, among many others.

The PhD program is designed to admit relatively small numbers of graduate students each year, which affords students the opportunity to forge close working relationships with the faculty. Our faculty and graduate students work together in a number of interdisciplinary research projects, programs, and centers, including the Social Science Environmental Health Research Institute (<http://www.northeastern.edu/environmentalhealth>); the Brudnick Center on Violence and Conflict (<http://www.northeastern.edu/brudnickcenter>); the Dukakis Center for Urban and Regional Policy (<http://www.northeastern.edu/dukakiscenter>); the Institute on Urban Health Research and Practice (<http://www.northeastern.edu/iuhrp>); Environmental Justice Research Collaborative (<http://www.northeastern.edu/nejrc>), the Institute on Race and Justice (<http://www.northeastern.edu/irj>), and the Women's, Gender and Sexuality Studies Program (<https://www.northeastern.edu/cssh/wgss>). Many of the faculty in the Department of Sociology and Anthropology have additional interests and are affiliated with other departments on campus, including environmental studies; law, policy, and society; Latino, Latin American, and Caribbean studies; African-American studies; international affairs; Jewish studies; and criminal justice. Students who wish to work with faculty in other disciplines are encouraged to enlist the aid of the sociology graduate program director or their advisers in contacting individual faculty members.

Admissions

Students admitted with a master's degree in sociology from another institution may be exempt from taking the theory exam but may be required to do some additional course work in theory and methods. For students admitted with a master's degree in a field other than sociology, the theory exam requirement and supplementary course work requirements will be determined on a case-by-case basis. Please note that all applicants for the doctoral program are required to submit a

writing sample. The writing sample should consist of written materials that demonstrate students' capacity for scholarship at the doctoral level. (Copies of several course or term papers or a copy of a master's thesis or paper are appropriate.)

Theory Examination

Students entering the graduate program must take a theory qualifying examination at the conclusion of their first year of study during the spring semester. The theory qualifying examination is a standard exam taken by all students in the same cohort. The exam is graded on a pass/fail basis. Students who fail the examination may take it a second time but will not be allowed to enroll for course work beyond the 30-semester-hour MA requirement or their first year of PhD residence (whichever case applies) until successfully completing the qualifying exam. Students who fail the examination on their second attempt will be asked to leave the program. In the latter case, a student may petition the graduate committee for a review of the student's record and performance in the program.

Degree Candidacy

To enter into degree candidacy, the student must have earned a Master of Arts degree or its departmental semester hour's equivalent, passed the qualifying examination, established a graduate committee of three faculty members from the sociology department, and successfully completed the candidacy examination.

Course Requirements

Students entering the PhD program from another university will be required to take the core requirements courses unless they can provide evidence of the completion of equivalent courses during their master's degree work. Credits earned for master's-level core requirements cannot be counted toward the doctorate.

- (SOCL 7210)
- Research Methods (SOCL 7211)
- Foundations of Social Theory 1 (SOCL 7200)
- Foundations of Social Theory 2 (SOCL 7201)

Doctoral candidates are also required to complete two advanced methods classes from a list of approved courses maintained by the department. Finally, doctoral students must take a course in the area of social inequality, choosing from a list of approved courses maintained by the department.

A minimum of 28 semester hours of graduate work beyond the master's degree is required.

Once students complete doctoral course work, they will register for the following courses in the following sequence:

- Exam Preparation—Doctoral (SOCL 8960) The semester following completion of course work, students will register for Exam Preparation. During this semester, students should complete their first comprehensive exam. Students only register for Exam Preparation once. Even if a student is unable to complete their first comprehensive exam during this time frame, they will not register for Exam Preparation again.
- Research (SOCL 9986) The next semester, students will register for Research, during which their second comprehensive examination should be completed. Upon completion of both comprehensive examinations, students will have achieved PhD degree candidacy, be certified by the graduate office, and will have five years to complete the dissertation.

- Dissertation (SOCL 9990) Upon achieving PhD degree candidacy, students will register for two consecutive semesters of Dissertation, during which they should complete and defend their dissertation proposal.
- Dissertation Continuation (SOCL 9996) Following the successful defense of their dissertation proposal, students will register for Dissertation Continuation for their remaining semesters until the dissertation is approved by the graduate office and submitted electronically to Proquest.

Students do not have to register for Dissertation Continuation during the summer unless that is when their dissertation defense occurs.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Qualifying examination or waiver
Annual review
Two field comprehensive examinations
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Core Course		
SOCL 7263	Social Psychology of Stratification	4
Advanced Methods		
Complete 8 semester hours from the following:		8
INSH 7400	Quantitative Analysis	
SOCL 7220 or INSH 6302	Seminar in Qualitative Analysis Qualitative Methods	
CRIM 7316	Advanced Topics in Methods	
PPTH 6320	Qualitative Methods in Health and Illness	
PPUA 6509	Techniques of Program Evaluation	

Electives

Code	Title	Hours
Complete 16 semester hours in the following subject area:		16
SOCL		

Dissertation

Code	Title	Hours
Exam Preparation		
Required for students who have completed coursework but have yet to complete the comprehensive exam. Not repeatable. Required for students who must maintain full-time status while completing thesis or comprehensive exam.		
SOCL 8960	Exam Preparation—Doctoral	
Research		
SOCL 9986	Research	
Dissertation		
Complete the following (repeatable) course twice:		
SOCL 9990	Dissertation	

Dissertation Continuation

Following completion of two semesters of SOCL 9990, registration in the following class is required in each semester (including the summer if the dissertation is submitted in summer) until the dissertation is completed:

SOCL 9996 Dissertation Continuation

Program Credit/GPA Requirements

28 total semester hours required

Minimum 3.000 GPA required

Interdisciplinary

Doctor of Philosophy (PhD)

- Network Science (p. 226)

Master of Science (MS)

- Environmental Science and Policy (p. 389)
- Engineering and Public Policy with Concentration in Energy and Environment (p. 146)
- Engineering and Public Policy with Concentration in Infrastructure Resilience (p. 147)

Graduate Certificate

- Data Analytics (p. 109)
- Digital Humanities (p. 425)
- Women's, Gender, and Sexuality Studies (p. 465)

Network Science, PhD

Website (<http://www.networkscienceinstitute.org>)

David Lazer, PhD

Distinguished Professor

College of Social Sciences and Humanities and College of Computer and Information Science

Network Science Program

177 Huntington Avenue, 10th Floor

617.373.8856

617.373.5884 (fax)

networkscience@northeastern.edu

The PhD program in network science aims to enhance our understanding of networks arising from the interplay of human behavior, sociotechnical infrastructures, information diffusion, and biological agents. This is an intrinsically multidisciplinary activity, with members of the network science community representing a wide range of fields including computer science, information science, complexity, physics, sociology, communication, organizational behavior, political science, and epidemiology. This is an interdisciplinary doctoral program focused on training students in network science across several colleges—including the College of Science, the College of Computer and Information Science, the College of Social Sciences and Humanities, Bouvé College of Health Sciences, the College of Engineering, and the College of Arts, Media and Design—with several research areas, including computational sciences, information sciences, health and life sciences, social sciences, and theoretical physics. See other collaborating colleges' catalog sections for possible concentration courses.

Course work is dependent on a student's area of research and subject to prior approval by their faculty advisor. Required course work includes the following: three foundational courses in network science

—Complex Networks and Applications (PHYS 5116); Network Science Data (PHYS 7331); and Social Networks (POLS 7334)—at least one supplemental course in network science—Network Science Data 2 (PHYS 7332); Social Networks (POLS 7334); or Data Mining Techniques (CS 6220)—12 semester hours of elective course work defined by their area of research; and two research courses with core faculty of the program. A minimum of 32 credit hours of course work is required, though the graduate program committee may recommend additional course work based on student research interests.

Satisfactory progress in the program will be ongoing and formally evaluated at the end of both the first and second years of the program. Students are expected to maintain a cumulative GPA of 3.000 or better in all course work. Students are not allowed to retake courses. A student who does not maintain the 3.000 GPA, or is not making satisfactory progress on their dissertation research, may be recommended for termination by the graduate program committee.

Each student will have one primary research advisor from the network science doctoral program faculty.

Students will be expected to select their research advisor by the end of the spring semester of their second year in the program.

The dissertation committee consists of at least four members: the dissertation advisor, one additional network science doctoral program faculty member, one member expert in the specific topic of research (can be from outside the university), and one additional tenured/tenure-track faculty member from the concentration department/conferring college. The dissertation advisor must be a full-time tenured or tenure-track member of the Northeastern University faculty. Students may repeat the comprehensive examination once if they are unsuccessful.

Degree Candidacy

A student is considered a PhD candidate upon completion of all required course work with a minimum cumulative GPA of 3.000, satisfactory completion of the qualification exam, and satisfactory completion of the comprehensive exam.

Qualifying Examination

The qualification exam will be an oral examination of the material during the students' course work. The exam will be an hour in length and consist of questions selected by network science faculty who comprise the qualifying examination and dissertation committee. Students will receive 50 to 80 potential questions, which they must be prepared to answer, one month before the exam. The exam will consist of a subset of these questions. The qualifying exam will be offered twice annually, in the fall and spring term. All students are required to initially sit for the exam in the fall, typically in their third year of the PhD program. Students who do not pass the qualifying exam on their first attempt are expected to retake the exam in the spring term. Students may sit for the qualifying exam no more than twice.

Students who fail to complete the qualifying examination but who have completed all the PhD program's required course work with a cumulative GPA of 3.000 or better will be awarded a terminal Master of Science in Network Science degree. Note that no students will be admitted directly into the network science program for receipt of a master's degree.

Comprehensive Examination

Students must submit a written dissertation proposal to the qualifying examination and dissertation committee. The proposal should identify relevant literature, the research problem, the research plan, and the potential impact on the field. A presentation of the proposal will be made in an open forum, and the student must successfully defend it before the

qualifying examination and dissertation committee. The comprehensive exam must precede the final dissertation defense by at least one year.

Dissertation Defense

A PhD student must complete and defend a dissertation that involves original research in network science. The dissertation defense must adhere to the College of Science policies.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Milestones

Annual review
Qualifying exam
Dissertation committee
Dissertation proposal
Dissertation defense

Core Requirements

Code	Title	Hours
Networks		
PHYS 5116	Complex Networks and Applications	4
PHYS 7331	Network Science Data	4
PHYS 7335	Dynamical Processes in Complex Networks	4
Choose one of the following:		4
PHYS 7332	Network Science Data 2	
CS 6220	Data Mining Techniques	
POLS 7334	Social Networks	
Research		
Complete the following (repeatable) course twice:		
NETS 8984	Research	1-4

Specializations

Choose one of the following specializations or 12 semester hours of elective course work from the electives course list:

- Computer Science (p.)
- Political Science (p.)
- Epidemiology (p. 228)
- Physics (p. 228)
- Math (p. 228)
- Electives (p. 228)

COMPUTER SCIENCE

Code	Title	Hours
Choose three from the following:		12
CS 6140	Machine Learning	
CS 6220	Data Mining Techniques	
CS 6240	Large-Scale Parallel Data Processing	
CS 7800	Advanced Algorithms	

POLITICAL SCIENCE

Code	Title	Hours
POLS 7200	Perspectives on Social Science Inquiry	4
POLS 7201	Research Design	4
POLS 7202	Quantitative Techniques	4

EPIDEMIOLOGY

Code	Title	Hours
PHTH 5202	Introduction to Epidemiology	3
PHTH 5224	Social Epidemiology	3
Electives: Choose two from the elective course list below.		6-8

PHYSICS

Code	Title	Hours
Choose three from the following:		12
PHYS 5318	Principles of Experimental Physics	
PHYS 7305	Statistical Physics	
PHYS 7731	Biological Physics 1	
PHYS 7321	Computational Physics	

MATH

Code	Title	Hours
Choose three from the following:		12
MATH 7241	Probability 1	
MATH 7233	Graph Theory	
MATH 7375	Topics in Topology	
MATH 7733	Readings in Graph Theory	

ELECTIVES

Complete a minimum of 12 semester hours of elective course work related to your area of research. Common electives include the following:

Code	Title	Hours
NETS 7341	Network Economics	4
NETS 7345	The Practice of Interdisciplinary Scholarship	4
NETS 7350	Bayesian and Network Statistics	4
NETS 7983	Topics	4
NETS 8941	Network Science Literature Review Seminar	2
MATH 7233	Graph Theory	4
CS 5800	Algorithms	4
CS 6140	Machine Learning	4
CS 7180	Special Topics in Artificial Intelligence	4
CS 7295	Special Topics in Data Visualization	4
PHYS 7337	Statistical Physics of Complex Networks	4
PPUA 5301	Introduction to Computational Statistics	4

Dissertation

Code	Title	Hours
Complete one of the following (repeatable) course twice:		
NETS 9990	Dissertation	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Environmental Science and Policy, MS

The Master of Science in Environmental Science and Policy program emphasizes a broadly interdisciplinary and synthetic approach that integrates knowledge in the environmental sciences (conservation

biology, climate change, fisheries science, ecosystem function, biodiversity, restoration ecology) with the social sciences (policy, economics, sociology, political science, and development) and humanities (environmental history, philosophy, and ethics). The goal of the program is to equip professionals with substantive breadth in knowledge and skills at the intersection of environmental science and policy. The program focuses on training students to think critically about the underlying causes of environmental problems and understanding the reciprocal relationships between coupled human-natural ecosystems and the interconnections between social and technological innovations. The program explores practical approaches and potential solutions that decision makers need to evaluate in policy debates related to promoting environmental sustainability.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Seminars		
PPUA 6101	Environmental Science and Policy Seminar 1	4
ENVR 6102	Environmental Science and Policy Seminar 2	4
Skills Courses		
Complete 6-8 semester hours from the following. At least one course needs to be taken from the College of Science Skills Course List and one course from the College of Social Sciences and Humanities Skills Course List.		6-8
<i>College of Science Skills Course List</i>		
EEMB 5130	Ecological Dynamics	
EEMB 5522	Experimental Design Marine Ecology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	
ENVR 5260	Geographical Information Systems	
ENVR 5400	Marine Science Policy and Ethics	
ENVR 6500	Biostatistics	
<i>College of Social Sciences and Humanities Skills Course List</i>		
LPSC 6313	Economic Analysis for Law, Policy, and Planning	
LPSC 7215	Advanced Quantitative Techniques	
LPSC 7305	Research and Statistical Methods	
LPSC 7311	Strategizing Public Policy	
POLS 7201	Research Design	
PPUA 5260	Ecological Economics	
PPUA 5261	Dynamic Modeling for Environmental Decision Making	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 5301	Introduction to Computational Statistics	
PPUA 6205	Research Design and Methodology in Urban and Regional Policy	
PPUA 6207	Research Toolkit for Urban and Regional Policy: Survey Techniques	
PPUA 6209	Research Toolkit for Urban and Regional Policy: Working with Datasets	

PPUA 6210	Research Toolkit for Urban and Regional Policy: Cost/Benefit Analysis
PPUA 6212	Research Toolkit for Urban and Regional Policy: Project Management
PPUA 6213	Research Toolkit for Urban and Regional Policy: Data Visualization
PPUA 6216	Research Toolkit for Urban and Regional Policy: Grant Writing
PPUA 6502	Economic Institutions and Analysis
PPUA 6506	Techniques of Policy Analysis
PPUA 6509	Techniques of Program Evaluation
PPUA 7237	Advanced Spatial Analysis of Urban Systems
SOCL 7211	Research Methods

Electives

Any skills course not taken to fulfill the skills courses requirement can be taken as an elective. Students must take three electives from the College of Science and three from the College of Social Science and Humanities. Students may petition to enroll in other relevant graduate courses offered by other schools at Northeastern University.

COLLEGE OF SCIENCE ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
EEMB 5518	Ocean and Coastal Processes	
EEMB 5528	Marine Conservation Biology	
EEMB 5536	Ocean and Coastal Sustainability	
EEMB 5548	Sociobiology	
ENVR 5210	Environmental Planning	
ENVR 5250	Geology and Land-Use Planning	

COLLEGE OF SOCIAL SCIENCES AND HUMANITIES ELECTIVE LIST

Code	Title	Hours
Complete three from the following:		12
LPSC 7311	Strategizing Public Policy	
LPSC 7312	Cities, Sustainability, and Climate Change	
PHTH 5214	Environmental Health	
PHTH 5230	Global Health	
PHTH 5440	Community-Based Participatory Research: Environmental Health	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5264	Energy Transitions and Climate Resilience: Technology, Policy, and Social Change	
PPUA 5266	Urban Theory and Science	
PPUA 5270	Food Systems and Public Policy	
PPUA 5275	Philanthropy and Civil Society	
PPUA 5302	Information Design and Visual Analytics	
PPUA 5390	Special Topics in Public Policy and Urban Affairs	
PPUA 6201	The 21st-Century City: Urban Opportunities and Challenges in a Global Context	
PPUA 6204	Urban Development and Politics	

PPUA 6505	Public Budgeting and Financial Management
PPUA 6506	Techniques of Policy Analysis
PPUA 6522	Administrative Ethics and Public Management
PPUA 6551	Nonprofit Organizations and Social Change
PPUA 6552	The Nonprofit Sector in Civil Society and Public Affairs
PPUA 6553	Nonprofit Financial Resource Development
PPUA 6862	Internship with Research
PPUA 6966	Practicum
PPUA 7225	The Open Classroom: Public Debates on Public Policy
PPUA 7230	Housing Policy
PPUA 7234	Land Use and Urban Growth Policy
PPUA 7239	Problems in Metropolitan Policymaking
PPUA 7249	Urban Coastal Sustainability
PPUA 7231	Transportation Policy
PPUA 7336	Social Capital and Resilience
PPUA 7346	Resilient Cities
PPUA 7673	Capstone in Public Policy and Urban Affairs
SOCL 7211	Research Methods
SOCL 7230	Political Ecology of Global Capitalism
SOCL 7235	Urban Sociology
SOCL 7243	Sociology of Health and Illness
SOCL 7257	Contemporary Issues in Sociology
SOCL 7267	Environment, Health, and Society
SOCL 7287	Social Movements in Health

Program Credit/GPA Requirements

Note: Typically, students will complete 12–16 semester hours of seminar and skills courses and 18–24 semester hours of electives.

36 total semester hours required

Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Energy & Environment, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH

Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Energy and Environment with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Energy and Environment in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved energy and environment technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Energy and Environment		
CIVE 7272 or ENGR 5670	Air Quality Management Sustainable Energy: Materials, Conversion, Storage, and Usage	4
Environmental Systems Modeling		
Complete 4 semester hours from the following:		4
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Agent-Based Modeling)	
Economics		
Complete 4 semester hours from the following:		4
PPUA 5260	Ecological Economics	
ECON 7210	Applied Microeconomic Policy Analysis	
LPSC 6313	Economic Analysis for Law, Policy, and Planning	
Public Policy and Analysis		
Complete 4 semester hours from the following:		4
LPSC 7311	Strategizing Public Policy	

PPUA 6506	Techniques of Policy Analysis
PPUA 6509	Techniques of Program Evaluation
Statistics	
Complete 4 semester hours from the following: 4	
CIVE 7100	Time Series and Geospatial Data Sciences
IE 6200	Engineering Probability and Statistics
IE 7280	Statistical Methods in Engineering
LPSC 7215	Advanced Quantitative Techniques

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the Energy and Environment Course List below.		12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Energy and Environment Course List below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Energy and Environment Course List below.		4

Energy and Environment Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
CIVE 5271	Solid and Hazardous Waste Management	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5300	Environmental Engineering Laboratory	
CIVE 7252	Water Engineering, Resources, and Energy Recovery	
CIVE 7261	Surface Water Quality Modeling	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Hydraulic Modeling)	
EMGT 6225	Economic Decision Making	
ENVR 5210	Environmental Planning	
ENVR 5260	Geographical Information Systems	
ME 5645	Environmental Issues in Manufacturing and Product Use	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	

PPUA 7237	Advanced Spatial Analysis of Urban Systems
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Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Engineering and Public Policy with Concentration in Infrastructure Resilience, MS

The purpose of this degree is to provide students with a background in engineering with the tools necessary to conduct robust policy analysis. It includes required core courses from the Department of Civil and Environmental Engineering and the School of Public Policy, complemented by electives in engineering and public policy, which can be met by two courses and a master's report (recommended), or by one course and a thesis, or by three courses. A minimum of 16 semester hours must be taken in the College of Engineering.

Degree Requirements	With Report	With Thesis	Course Work Only
Required core courses	20 SH	20 SH	20 SH
Other electives	8 SH	4 SH	12 SH
Master of Science report/thesis	4 SH	8 SH	
Minimum semester hours required	32 SH	32 SH	32 SH

Graduate Certificate Options

Students enrolled in a master's degree have the opportunity to also pursue one of the many engineering graduate certificate options in addition to or in combination with the MS degree. Students should consult their faculty advisor regarding these options (p. 229).

GORDON INSTITUTE OF ENGINEERING LEADERSHIP

Master's Degree in Engineering and Public Policy with Concentration in Infrastructure Resilience with Graduate Certificate in Engineering Leadership

Students may complete a Master of Science in Engineering and Public Policy with Concentration in Infrastructure Resilience in addition to earning a Graduate Certificate in Engineering Leadership. Students must apply and be admitted to the Gordon Engineering Leadership Program in order to pursue this option. The program requires fulfillment of the 16 semester-hour curriculum required to earn the Graduate Certificate in Engineering Leadership, which includes an industry-based challenge project with multiple mentors. The integrated 36-semester-hour degree and certificate will require 20 hours of advisor-approved infrastructure resilience technical courses.

Engineering Leadership (p. 222)

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Infrastructure Resilience		
CIVE 7110	Critical Infrastructure Resilience	4
Environmental Systems Modeling		
Complete 4 semester hours from the following:		4
CIVE 5261	Dynamic Modeling for Environmental Investment and Policymaking	
CIVE 5275	Life Cycle Assessment of Materials, Products, and Infrastructure	
CIVE 5280	Remote Sensing of the Environment	
CIVE 5699	Special Topics in Civil Engineering (Climate Science and Technology Adaptation and Policy)	
CIVE 7388	Special Topics in Civil Engineering (Informatics in Civil Engineering)	
CIVE 7392	Special Topics in Environmental Engineering (Agent-based Modeling)	
Economics		
Complete 4 semester hours from the following:		4
ECON 7210	Applied Microeconomic Policy Analysis	
LPSC 6313	Economic Analysis for Law, Policy, and Planning	
Public Policy and Analysis		
Complete 4 semester hours from the following:		4
LPSC 7311	Strategizing Public Policy	
PPUA 6506	Techniques of Policy Analysis	
PPUA 6509	Techniques of Program Evaluation	
Statistics		
Complete 4 semester hours from the following:		4
CIVE 7100	Time Series and Geospatial Data Sciences	
IE 6200	Engineering Probability and Statistics	
IE 7280	Statistical Methods in Engineering	
LPSC 7215	Advanced Quantitative Techniques	

Options

Complete one of the following options:

COURSE WORK OPTION

Code	Title	Hours
Complete 12 semester hours from the infrastructure course list below.		12

REPORT OPTION

Code	Title	Hours
CIVE 8674	Master's Report	4
Complete 8 semester hours from the Infrastructure course list below.		8

THESIS OPTION

Code	Title	Hours
CIVE 7990	Thesis	8
Complete 4 semester hours from the Infrastructure course list below.		4

Infrastructure Course List

Any required core course not used to meet the required core course requirement can be taken as a restricted elective.

Code	Title	Hours
EMGT 6225	Economic Decision Making	
ENVR 5260	Geographical Information Systems	
IA 5250	Decision Making for Critical Infrastructure	
IE 5500	Systems Engineering in Public Programs	
IE 5640	Data Mining for Engineering Applications	
IE 7290	Reliability Analysis and Risk Assessment	
ME 5645	Environmental Issues in Manufacturing and Product Use	
PPUA 5260	Ecological Economics	
PPUA 5262	Big Data for Cities	
PPUA 5263	Geographic Information Systems for Urban and Regional Policy	
PPUA 7230	Housing Policy	
PPUA 7231	Transportation Policy	
PPUA 7234	Land Use and Urban Growth Policy	
PPUA 7237	Advanced Spatial Analysis of Urban Systems	
PPUA 7239	Problems in Metropolitan Policymaking	
PPUA 7240	Health Policy and Politics	

Program Credit/GPA Requirements

32 total semester hours required
Minimum 3.000 GPA required

Data Analytics, Graduate Certificate

The interdisciplinary Graduate Certificate in Data Analytics is offered through a collaboration between the College of Computer and Information Sciences and the College of Social Sciences and Humanities. The certificate curriculum emphasizes the skills needed to bridge between emerging technological capacities and traditional policymaking processes. The program is designed to provide students with foundational knowledge in data science—including data management, machine learning, data mining, statistics, and visualizing and communicating data—that can be applied to data-driven decision making in any discipline.

For more information on the certificate, refer to the program's website (<http://www.northeastern.edu/datascience>).

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
DA 5020	Collecting, Storing, and Retrieving Data	4
DA 5030	Introduction to Data Mining/Machine Learning	4

PPUA 5301	Introduction to Computational Statistics	4
PPUA 5302	Information Design and Visual Analytics	4

Program Credit/GPA Requirements

16 total semester hours required
 Minimum 3.000 GPA required

Digital Humanities, Graduate Certificate

Elizabeth Maddock Dillon, PhD
 Certificate Co-Director
 e.dillon@northeastern.edu

Julia Flanders, PhD
 Certificate Co-Director
 j.flanders@northeastern.edu

Sarah Connell, PhD
 Certificate Administrator
 sa.connell@northeastern.edu

CSSH Graduate Programs General Regulations (https://www.northeastern.edu/cssh/graduate/current_students)

The Graduate Certificate in Digital Humanities allows students to pursue an organized course of study in digital humanities with the interdisciplinary faculty of the NULab for Texts, Maps, and Networks (<http://www.northeastern.edu/nulab>) while completing requirements for their degrees in existing Northeastern University doctoral and master’s programs. *This is not a stand-alone certificate*; rather, it will be completed by students in the course of their existing program of study.

Digital humanities (DH) is an emerging field of research that is interdisciplinary in scope and collaborative in nature. The field is developing in relation to new digital technologies that have changed the objects of study, methods, and opportunities for research and teaching in existing humanities fields. Digitized texts are now read and accessed in new ways; digitized corpora of texts make possible new modes of quantitative and qualitative analysis (including “distant reading,” text mining, mapping, and network analysis); born digital objects constitute new primary sources in need of humanistic theorization, approaches, and critical vocabularies; and modes of encoding, aggregating, and connecting texts enable the creation of new archival resources that are changing our understanding of the archive itself as well revealing new historical, literary, and cultural patterns.

The field is new and developing rapidly and many students are eager for training in this area—both because DH is at the cutting edge of disciplinary work and because it offers new opportunities for employment within the academy and outside of it.

Academic Standing/Progress

Students in the program are monitored for academic progress. Those students whose GPA falls below a 3.000 are notified by and meet with the director of academic programs. They are counseled that if their GPA does not rise to a 3.000 or higher, they run the risk of not graduating and are advised on strategies for improvement.

Final Project

The student will complete a final independent DH research project located in the student’s home program (such as a thesis, or a portion thereof) or participation in a collaborative DH project with substantial

student participation. The final project will be overseen by the NULab faculty members teaching the NULab Project Seminar during its development; NULab workshop instructors will advise students on their projects and help students get guidance from other faculty as appropriate. Final projects will be submitted with three components: the project itself, a written project description of about 2,000 words, and a presentation to the NULab community. The DH certificate committee will formally approve all final projects.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirements

Code	Title	Hours
Topics/Readings/Methods		
ENGL 7370	Topics in Digital Humanities (Introduction to Digital Humanities)	4
or HIST 7370	Texts, Maps, and Networks: Readings and Methods for Digital History	

Lab Project Seminar

Complete the following (repeatable) 2-credit course two times:		4
INSH 7910	NULab Project Seminar	

Elective

Code	Title	Hours
Complete 4 semester hours from the following:		4
ARTG 5100	Information Design Studio 1: Principles	
ARTG 5120	Research Methods for Design	
CS 6120	Natural Language Processing	
CS 7290	Special Topics in Data Science	
ENGL 7370	Topics in Digital Humanities	
INSH 6406	Analyzing Complex Digitized Data	
JRNL 6340	Fundamentals of Digital Journalism	
JRNL 6341	Telling Your Story with Data	
JRNL 6355	Seminar in Investigative Reporting	
HIST 7219	Topics in Cultural History (selected topics only)	
POLS 7334	Social Networks	
PPUA 5301	Introduction to Computational Statistics	
PPUA 5302	Information Design and Visual Analytics	

Program Credit/GPA Requirements

Minimum 12 total semester hours required
 Minimum 3.000 GPA required

Women’s, Gender, and Sexuality Studies, Graduate Certificate

Website (<https://www.northeastern.edu/cssh/wgss/graduate/certificate>)

Suzanna Walters
 Graduate Program Director
 s.walters@northeastern.edu

Kiki Samko
 Graduate Program Administrator

k.samko@no (k.samko@neu.edu)rneastern.edu
 (k.samko@northeastern.edu)
 617.373.4984

The Graduate Certificate in Women's, Gender, and Sexuality Studies (WGSS) is designed for students currently enrolled in a Northeastern University master's or doctoral program. The certificate aims to provide enhanced competency by:

- Analyzing contemporary feminist theoretical frameworks, methodologies, issues, and topics and their relation to established disciplines
- Focusing on the intersection of gender with sexuality, race, class, and other vectors of power and identity
- Broadening and enriching analytical skills in one or more disciplines while drawing on the interdisciplinary perspectives of WGSS
- Challenging the traditional separation of academic theory from political and professional practice

Prospective certificate students are advised initially to consult with the WGSS program director to develop a plan for completing the certificate.

WGSS also offers a specific path for master's of public health students to complete a graduate certificate in WGSS. MPH students are able to apply theories, concepts, and methods gained from the WGSS certificate to urban health issues. Certificate students will work with an advisor in the public health program to develop a plan for completing the certificate.

Program Requirements

Complete all courses and requirements listed below unless otherwise indicated.

Core Requirement

Code	Title	Hours
Complete one of the following:		4
WMNS 6100	Theorizing Gender and Sexuality	
WMNS 7615	Feminist Inquiry	
WMNS 7100	Queer Theory: Sexualities, Genders, Politics	
or SOCL 7100	Queer Theory: Sexualities, Genders, Politics	

Electives

Code	Title	Hours
Complete two of the following. At least one course must come from outside the student's home discipline. Any course not taken to complete the required course work may be taken as an elective. Electives outside this list may be chosen in consultation with program director. Students may also consider courses at the Graduate Consortium for Studies of Gender, Culture, Women, and Sexuality (located at MIT).		8
CAEP 6380	Seminar in Feminist Psychology	
HIST 7304	Research Seminar in Gender and Society in the Modern World	
SOCL 7222	Gender and Globalization	
SOCL 7225	Gender and Social Movements	
SOCL 7265	Sociology of Gender	
SOCL 7273	Gender and Social Policy	
WMNS 7635	Understanding the Pornographic and the Obscene	
WMNS 7900	Special Topics in Women's, Gender, and Sexuality Studies	

WMNS 7976 Directed Study

The following courses are required for MPH students, in addition to one elective from the list above. Non-MPH students may not use these courses as electives.

PHTH 5120	Race, Ethnicity, and Health in the United States
PHTH 6204	Society, Behavior, and Health

The course below is an elective for MPH students only and must incorporate a project focused on gender and/or sexuality into the selected urban public health issue. A WGSS faculty member must serve on the capstone committee.

PHTH 6910	Public Health Capstone
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Program Credit/GPA Requirements

12 total semester hours required

Minimum 3.000 GPA required

Faculty

Mehdi Abedi

Assistant Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Emad Aboelela

Associate Teaching Professor, Electrical and Computer Engineering; University of Miami, PhD

Max Abrahms

Assistant Professor, Political Science; University of California, Los Angeles, PhD

Ali Abur

Professor, Electrical and Computer Engineering; Ohio State University, PhD

Laurie Achin

Visiting Lecturer, American Sign Language; Gallaudet University, MA

Daniel Adams

Associate Professor, Architecture; Harvard University, MArch

George G. Adams

College of Engineering Distinguished Professor, Mechanical and Industrial Engineering; University of California, Berkeley, PhD

Jeffrey Agar

Associate Professor, Chemistry and Chemical Biology and Pharmaceutical Sciences; University of Georgia, PhD

Rajesh Aggarwal

Professor, Finance; Harvard University, PhD

Christina Agostinelli-Fucile

Assistant Teaching Professor, World Languages Center; State University of New York, Buffalo, PhD

Ruth Aguilera

Distinguished Professor, International Business and Strategy; Harvard University, PhD

Amal Ahmed

Associate Professor, Computer and Information Science; Princeton University, PhD

Amira Ahmed Mohamed

Visiting Scholar, International Affairs; University of East London (United Kingdom), PhD

Jaehan Ahn

Assistant Professor, Accounting; University of Oklahoma, PhD

Sophia Ainslie

Lecturer, Art + Design; School of the Museum of Fine Arts/Tufts University, MFA

Mohammad Alam

Professor, Economics; University of Western Ontario (Canada), PhD

Noor E. Alam

Assistant Professor, Mechanical and Industrial Engineering; University of Alberta (Canada), PhD

Brian Albrecht

Associate Cooperative Education Coordinator, College of Engineering; Carnegie Mellon University, MS

Len Albright

Assistant Professor, Sociology and Anthropology and Public Policy and Urban Affairs; University of Chicago, PhD

Daniel Aldrich

Professor, Political Science and Public Policy and Urban Affairs; Harvard University, PhD

Todd M. Alessandri

Associate Professor, International Business and Strategy; University of North Carolina, Chapel Hill, PhD

Jacques Alexis

Assistant Academic Specialist, College of Professional Studies; University of Wisconsin, Platteville, MS

Nicole Aljoe

Associate Professor, English; Tufts University, PhD

Kristen Allison

Assistant Professor, Communication Sciences and Disorders; University of Wisconsin, Madison, PhD

Michael Allshouse

Assistant Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Meryl Alper

Assistant Professor, Communication Studies; University of Southern California, PhD

Shannon Alpert

Assistant Teaching Professor, College of Professional Studies; University of North Carolina, Charlotte, EdD

Akram N. Alshawabkeh

George A. Snell Professor of Engineering, Civil and Environmental Engineering; Louisiana State University, PhD

Sari Altschuler

Assistant Professor, English; City University of New York, PhD

George O. Alverson

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Christopher Amato

Assistant Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Steven Amato

Associate Teaching Professor, College of Professional Studies; Boston College, PhD

Saurabh Ambulkar

Assistant Professor, Supply Chain and Information Management; Iowa State University, PhD

Jane Amidon

Professor, Architecture; Harvard University, MLA

Mansoor M. Amiji

University Distinguished Professor, Pharmaceutical Sciences; Purdue University, PhD

Mahshid Amirabadi

Assistant Professor, Electrical and Computer Engineering; Texas AM University, PhD

Ghita Amor-Tijani

Lecturer, Computer and Information Science; George Washington University, PhD

Teiichi Ando

Professor, Mechanical and Industrial Engineering; Colorado School of Mines, PhD

Jonathan Andrew

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; SIT Graduate Institute, MA

Edwin C. Andrews

Associate Professor, Art + Design; Indiana University, MFA

Jose Annunziato

Assistant Teaching Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Javier Apfeld

Assistant Professor, Biology; University of California, San Francisco, PhD

Carmen G. Armengol

Associate Professor, Applied Psychology; Pennsylvania State University, PhD

Richard Arrowood

Associate Teaching Professor, College of Professional Studies; Massachusetts School of Law, JD

Cheryl Arruda

Assistant Cooperative Education Coordinator, College of Engineering; Northeastern University, MEd

Lori Ashline

Assistant Teaching Professor, College of Professional Studies; Western New England University, JD

Javed A. Aslam

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Yernat Assylbekov

Zelevinsky Research Professor, Mathematics; University of Washington, PhD

Anand Asthagiri

Associate Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Polly Attwood

Associate Teaching Professor, College of Professional Studies; Harvard University, EdD

Debra Auguste

Professor, Chemical Engineering; Princeton University, PhD

Earlene Avalon

Assistant Teaching Professor, College of Professional Studies; Simmons College, PhD

Emily Avery-Miller

Assistant Teaching Professor, English; Emerson College, MFA

Cheryl Avitabile

Assistant Clinical Professor, Nursing; Massachusetts General Hospital Institute of Health Professions, DNP

Hava Avraham

Research Assistant Professor, Center for Drug Discovery; Hebrew University of Jerusalem (Israel), PhD

Joseph L. Ayers

Professor, Marine and Environmental Sciences; University of California, Santa Cruz, PhD

Sophie Bacq

Assistant Professor and Mark L. and Karen D. Vachon Faculty Fellow, Entrepreneurship and Innovation; Louvain School of Management (Belgium), PhD

Robert Baginski

Assistant Clinical Professor, Physician Assistant Program; University of Connecticut, DSc

Jianqui Bai

Assistant Professor, Finance; University of Southern California, PhD

Rekha Bai

Lecturer, Mathematics; University of Iowa, PhD

Moya Bailey

Assistant Professor, Cultures, Societies, and Global Studies and Women's, Gender, and Sexuality Studies; Emory University, PhD

Richard H. Bailey

Professor, Marine and Environmental Sciences; University of North Carolina, Chapel Hill, PhD

Ambika Bajpayee

Assistant Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Allison K. Baker

Lecturer, Psychology; Northeastern University, PhD

Shalanda Baker

Professor, Law and Public Policy and Urban Affairs; Northeastern University, JD; University of Wisconsin, LLM

Apostolia Baki

Research Assistant Professor, Pharmaceutical Sciences; University of Athens (Greece), PhD

Ilter Bakkal

Assistant Teaching Professor, Economics; Northern Illinois University, PhD

Charles Bame-Aldred

Associate Academic Specialist, Accounting; University of Massachusetts, Amherst, PhD

Benita Bamgbade

Assistant Professor, Pharmacy and Health Systems Sciences; University of Texas, Austin, PhD

Elitsa Banalieva

Associate Professor and Gary Gregg Faculty Fellow, International Business and Strategy; Indiana University, PhD

Debra Bangs

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Brendan Bannister

Associate Professor, Management and Organizational Development; Kent State University, DBA

Arun Bansil

University Distinguished Professor, Physics; Harvard University, PhD

Albert-Laszlo Barabasi

Robert Gray Dodge Professor and University Distinguished Professor, Physics and Computer and Information Science; Boston University, PhD

Emanuela Barberis

Associate Professor, Physics; University of California, Santa Cruz, PhD

Gia Barboza

Assistant Professor, Cultures, Societies, and Global Studies and International Affairs and Political Science; Michigan State University, PhD

Gloria Barczak

Professor, Marketing; Syracuse University, PhD

Sumner Barenberg

Professor of the Practice, Bioengineering; Case Western Reserve University, PhD

Emily S. Barnard

Zelevinsky Research Professor, Mathematics; North Carolina State University, PhD

Cynthia Baron

Associate Academic Specialist, College of Professional Studies; Northeastern University, MBA

Amilcar Barreto

Associate Professor, Cultures, Societies, and Global Studies and International Affairs; State University of New York, Buffalo, PhD

Lisa Barrett

University Distinguished Professor, Psychology; University of Waterloo (Canada), PhD

Margarita Barrios Ponce

Assistant Teaching Professor, Art + Design; Yale University, MFA

Carey Barry

Assistant Clinical Professor, Physician Assistant Program; Quinnipiac University, MS

Yakov Bart

Associate Professor and Thomas Moore Faculty Fellow, Marketing; University of California, Berkeley, PhD

Stefano Basagni

Associate Professor, Electrical and Computer Engineering; University of Texas, Dallas, PhD

Marla Baskerville

Associate Professor, Management and Organizational Development; Tulane University, PhD

John Basl

Assistant Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Maureen Basmajian

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MBA

Kayla Bassett

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Linnea Basu

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MS

Oleg Batishchev

Professor of the Practice, Physics; Moscow Institute of Physics and Technology (Russia), PhD

Christopher E. Beasley

Associate Professor, Mathematics; Princeton University, PhD

Nicholas Beauchamp

Assistant Professor, Political Science; New York University, PhD

Michelle A. Beauchesne

Associate Professor, Nursing; Boston University, DNSc

Mike Beaudet

Professor of the Practice, Journalism; Northeastern University, MA

Laura Beerits

Assistant Teaching Professor, English; University of Texas, Austin, PhD

Gail S. Begley

Teaching Professor, Biology; Boston University, PhD

Mehdi Behroozi

Assistant Professor, Mechanical and Industrial Engineering; University of Minnesota, PhD

Edward Beighley

Associate Professor, Civil and Environmental Engineering; University of Maryland, PhD

Chiara Bellini

Assistant Professor, Bioengineering; University of Calgary (Canada), PhD

Lynda Beltz

Assistant Teaching Professor, College of Professional Studies; Indiana University, Bloomington, PhD

Sidi Bencherif

Assistant Professor, Chemical Engineering; Carnegie Mellon University, PhD

Jonathan Benda

Associate Teaching Professor, Writing Program; Syracuse University, PhD

Elisabeth Bennett

Associate Teaching Professor, College of Professional Studies; University of Georgia, PhD

James C. Benneyan

Professor, Mechanical and Industrial Engineering; University of Massachusetts, Amherst, PhD

Iris Berent

Professor, Psychology; University of Pittsburgh, PhD

Dionisio Bernal

Professor, Civil and Environmental Engineering; University of Tennessee, PhD

Eugene A. Bernstein

Associate Teaching Professor, Pharmaceutical Sciences; Ivanovo Medical Institute (Russia), PhD

Baktybek Beshimov

Professor of the Practice, College of Professional Studies; Kyrgyz National University (Kyrgyzstan), PhD

Craig T. Bettinson

Director of Cooperative Education, College of Arts, Media and Design; Northeastern University, MEd

Penny Beuning

Associate Professor, Chemistry and Chemical Biology; University of Minnesota, PhD

Peter J. Bex

Professor, Psychology; Cardiff University (United Kingdom), PhD

Dapeng Bi

Assistant Professor, Physics; Brandeis University, PhD

Timothy Bickmore

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Brian Bicknell

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, EdD

Allan Bird

Darla and Frederick Brodsky Trustee Professor in Global Business, International Business and Strategy; University of Oregon, PhD

Priyanka Bishnoi

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Southern California, MS

Scott Bishop

Professor of the Practice, Architecture; University of Pennsylvania, MArch

Deborah Blackwell

Associate Clinical Professor, Nursing; University of Texas, DNP

Nathan Blake

Associate Teaching Professor, Media and Screen Studies; University of California, PhD

Samuel J. Blank

Professor, Mathematics; Brandeis University, PhD

Robert J. Blaser

Associate Cooperative Education Coordinator, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, MS

Martin Blatt

Professor of the Practice, History; Boston University, PhD

John Bleakney

Assistant Cooperative Education Coordinator, Graduate School of Engineering; State University of New York, Albany, MA

Francis Blessington

Professor, English; Brown University, PhD

Cameron Blevins

Assistant Professor, History; Stanford University, PhD

Aaron Block

Associate Teaching Professor, English; Emerson College, MFA

Barry Bluestone

Russell B. and Andrée B. Stearns Trustee Professor of Political Economy, Public Policy and Urban Affairs; University of Michigan, PhD

Linda Blum

Professor, Sociology and Anthropology; University of California, Berkeley, PhD

Rhonda M. Board

Associate Professor, Nursing; Ohio State University, PhD

Janet Bobcean

Associate Professor, Theatre; Ohio University, MFA

Erika Boeckeler

Assistant Professor, English; Harvard University, PhD

Geoff Boeing

Assistant Professor, Public Policy and Urban Affairs; University of California, Berkeley, PhD

Ioana Corina Bogdan

Assistant Teaching Professor, Electrical and Computer Engineering; University of Metz (France), PhD

Charles Bognanni

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MEd

Christopher Bolick

Assistant Academic Specialist, College of Professional Studies; Western Carolina University, MS

Paul J. Bolster

Professor, Finance; Virginia Polytechnic Institute, PhD

Tamara Bonaci

Lecturer, Computer and Information Science; University of Washington, PhD

Andrea Bonezzi

Assistant Professor, Marketing; Northwestern University, PhD

Lorraine A. Book

Assistant Clinical Professor, Communication Sciences and Disorders; Florida State University, PhD

Raymond G. Booth

Professor, Pharmaceutical Sciences and Chemistry and Chemical Biology; University of California, San Francisco, PhD

Monica Borgida

Assistant Teaching Professor, College of Professional Studies; University of Pisa and Bologna (Italy), PhD

Michelle Borkin

Assistant Professor, Computer and Information Science; Harvard University, PhD

Natalie Bormann

Teaching Professor, Political Science; University of Newcastle upon Tyne (United Kingdom), PhD

Jeffery A. Born

Professor, Finance; University of North Carolina, Chapel Hill, PhD

Christopher Bosso

Professor, Public Policy and Urban Affairs; University of Pittsburgh, PhD

Ekaterina Botchkovar

Associate Professor, Criminology and Criminal Justice; North Carolina State University, PhD

Kevin Boudreau

Associate Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Alma Bournazian

Associate Academic Specialist, American Sign Language; Western Maryland College, MS

Stacey Bourns

Professor, World Languages Center; University of Texas, Austin, PhD

Carla Bouwmeester

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, PharmD

Jennifer L. Bowen

Associate Professor, Marine and Environmental Sciences; Boston University, PhD

James Boyer

Assistant Academic Specialist, Accounting; Northeastern University, MBA

Nicole M. Boyson

Professor, Finance; Ohio State University, PhD

Kara Braciale

Lecturer, Art + Design; University of Illinois, Chicago, MFA

Anthony Braga

Distinguished Professor, Criminology and Criminal Justice; Rutgers University, PhD

Maxim Braverman

Professor, Mathematics; Tel Aviv University (Israel), PhD

Heather C. Brenhouse

Assistant Professor, Psychology; Northeastern University, PhD

Janet Briand-McGowan

Assistant Clinical Professor, Nursing; Northeastern University, DNP

Becky A. Briesacher

Associate Professor, Pharmacy and Health Systems Sciences; University of Maryland, Baltimore, PhD

Amy M. Briesch

Associate Professor, Applied Psychology; University of Connecticut, PhD

Elizabeth Britt

Associate Professor, English; Rensselaer Polytechnic Institute, PhD

Sharon M. Britton

Assistant Cooperative Education Coordinator, College of Engineering; Massachusetts Institute of Technology, MS

Oscar Brookins

Associate Professor, Economics; State University of New York, Buffalo, PhD

Dana H. Brooks

Professor, Electrical and Computer Engineering; Northeastern University, PhD

Cammy Brothers

Associate Professor, Architecture and Art + Design; Harvard University, PhD

Craig Brown

Visiting Associate Professor, Finance; University of Michigan, PhD

Nicholas Brown

Associate Teaching Professor, Architecture and History; University of Illinois, Urbana-Champaign, PhD

Nicholas Brown

Assistant Teaching Professor, Graduate School of Engineering; University of California, Los Angeles, PhD

Philip M. Brown

University Distinguished Professor, Sociology and Anthropology and Health Sciences; Brandeis University, PhD

Ronald Brown

Assistant Teaching Professor, College of Professional Studies; Harvard University, EdD

Timothy Brown

Professor, History; University of California, Berkeley, PhD

Todd A. Brown

Clinical Instructor, Pharmacy and Health Systems Sciences; Northeastern University, MHP

James Browning

Assistant Teaching Professor, Engineering; University of Colorado, Boulder, PhD

Maria Brucato

Assistant Teaching Professor, World Languages Center; University of Texas, PhD

Elizabeth Bucar

Associate Professor, Philosophy and Religion; University of Chicago, PhD

David E. Budil

Associate Professor, Chemistry and Chemical Biology; University of Chicago, PhD

Jamie G. Bunce

Lecturer, Behavioral Neuroscience; University of Connecticut, PhD

Lucy Bunning

Assistant Teaching Professor, College of Professional Studies; Lesley University, PhD

Jeffrey Burds

Associate Professor, History; Yale University, PhD

Lynn H. Burke

Senior Cooperative Education Coordinator, College of Arts, Media and Design; University of Massachusetts, Amherst, MEd

Pamela J. Burke

Clinical Professor, Nursing; Boston College, PhD

Jose Buscaglia

Professor, Cultures, Societies, and Global Studies; University of Buffalo, PhD

Jeremy Bushnell

Associate Teaching Professor, Writing Program; University of Arizona, Tucson, MFA

Ahmed A. Busnaina

University Distinguished Professor, William Lincoln Smith Professor of Mechanical Engineering, Mechanical and Industrial Engineering; Oklahoma State University, PhD

Bobette Buster

Professor of the Practice, Journalism; Northwestern University, MFA

Michael Butera

Clinical Instructor, Nursing; Northeastern University, MS

Qinghong Cai

Associate Teaching Professor, World Languages Center; University of Kansas, MS

Victoria Cain

Assistant Professor, History; Columbia University, PhD

Paula Caligiuri

Distinguished Professor of Global Leadership, International Business and Strategy; Pennsylvania State University, PhD

Lisa M. Campagnoni

Assistant Cooperative Education Coordinator, College of Science; Northeastern University, MA

Octavia Camps

Professor, Electrical and Computer Engineering; University of Washington, PhD

Yanet Canavan

Assistant Academic Specialist, World Languages Center; Salem State College, MA

Kristopher Cannon

Assistant Teaching Professor, Media and Screen Studies; Georgia State University, PhD

Mira Cantor

Professor, Art + Design; University of Illinois, Urbana-Champaign, MFA

Luca Caracoglia

Associate Professor, Civil and Environmental Engineering; University of Trieste (Italy), PhD

Benjamin Caras

Lecturer, Art + Design; University of Massachusetts, Amherst, MFA

Peter Cardillo

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Boston College, MS

Joelle Carlo

Assistant Teaching Professor, Pharmaceutical Sciences; State University of New York, Buffalo, PhD

Alexa A. Carlson

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Butler University, PharmD

Mary Carney

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Boston College, MSN

Heather Carpenter-Oliveira

Assistant Cooperative Education Coordinator, College of Engineering; Northeastern University, MS

Jonathan Carr

Associate Teaching Professor, Theatre; Columbia University, MFA

Michelle Carr

Lecturer, Communication Studies; Kingston University (United Kingdom), MA

Sara Carr

Assistant Professor, Architecture; University of California, Berkeley, PhD

Rebecca L. Carrier

Professor, Chemical Engineering; Massachusetts Institute of Technology, PhD

Matthew Carroll

Professor of the Practice, Journalism; Northeastern University, BS

Patricia Case

Assistant Teaching Professor, Health Sciences; Harvard University, PhD

Bonnie Jo Casey

Assistant Clinical Professor, Physician Assistant Program; University of New England, MS

Cristian Cassella

Assistant Professor, Electrical and Computer Engineering; Carnegie Mellon University, PhD

Ana-Maria Castravet

Associate Professor, Mathematics; Massachusetts Institute of Technology, PhD

Smajl Cenjic

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Cambridge College, MA

Jana Cephas

Assistant Professor, Architecture; Harvard University, PhD

Robert J. Cersosimo

Associate Professor, Pharmacy and Health Systems Sciences; University of Utah, PharmD

Christopher Cesario

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Yunrong Chai

Assistant Professor, Biology; Cornell University, PhD

Paul M. Champion

Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Chee Chan

Associate Academic Specialist, Marketing; Michigan State University, PhD

Katherine Chan

Assistant Teaching Professor, Music; University of Minnesota, PhD

Changyan Chen

Research Professor, Center for Drug Discovery; Columbia University, PhD

Qin Chen

Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Old Dominion University, PhD

Yi-Da Chen

Assistant Professor, Supply Chain and Information Management; University of Arizona, PhD

Esther Chewning

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Suffolk University, MS

Cherese Childers-McKee

Assistant Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Elizabeth A. Chilvers

Associate Professor, Cooperative Education, D'Amore-McKim School of Business; Northeastern University, MEd

W. Paul Chiou

Assistant Teaching Professor, Finance; Rutgers University, PhD

David R. Choffnes

Assistant Professor, Computer and Information Science; Northwestern University, PhD

Sam S. Choi

Associate Teaching Professor, Architecture; Harvard University, MArch

Sunho Choi

Assistant Professor, Chemical Engineering; University of Minnesota, PhD

Bartłomiej Chomanski

Visiting Lecturer, Philosophy and Religion; University of Miami, PhD

Chun-An Chou

Assistant Professor, Mechanical and Industrial Engineering; Rutgers University, PhD

Kaushik Roy Chowdhury

Associate Professor, Electrical and Computer Engineering; University of Cincinnati, MS

Ken Y. Chung

Assistant Teaching Professor, Chemistry and Chemical Biology; Michigan State University, PhD

Samuel Chung

Assistant Professor, Bioengineering; Harvard University, PhD

Hillary Chute

Professor, English and Art + Design; Rutgers University, PhD

Dawn M. Cisewski

Assistant Teaching Professor, Psychology; Indiana University of Pennsylvania, PsyD

Bruce H. Clark

Associate Professor, Marketing; Stanford University, PhD

Edmund L. Clark

Associate Academic Specialist, Entrepreneurship and Innovation; Clark University, MBA

Heather Clark

Professor, Bioengineering and Chemistry and Chemical Biology; University of Michigan, PhD

Sean I. Clark

Zelevinsky Research Professor, Mathematics; University of Virginia, PhD

Stephen B. Clark

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Alan Clayton-Matthews

Associate Professor, Public Policy and Urban Affairs and Economics; Boston College, PhD

Sandra S. Cleveland

Associate Clinical Professor, Communication Sciences and Disorders; Pennsylvania College of Optometry, AuD

William D. Clinger

Associate Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Paul Closas

Assistant Professor, Electrical and Computer Engineering; Universitat Politècnica de Catalunya (Spain), PhD

Emily Clough

Assistant Professor, Political Science and International Affairs; Harvard University, PhD

Ricardo Coelho Guerreiro Da Silva Camacho

Visiting Lecturer, Architecture; Harvard University, MArch

Dennis Cokely

Professor, American Sign Language; Georgetown University, PhD

Maxine Cokely

Associate Academic Specialist, College of Professional Studies; Bowie State University, MA

Stephanie Colbry

Assistant Teaching Professor, College of Professional Studies; Eastern University, PhD

John D. Coley

Associate Professor, Psychology; University of Michigan, PhD

Greg Collier

Professor of the Practice, Entrepreneurship and Innovation; Eastern Michigan University, MBA

Randall C. Colvin

Associate Professor, Psychology; University of Illinois, Urbana-Champaign, PhD

Sally Conant

Assistant Cooperative Education Coordinator, College of Engineering; Salve Regina University, MA

Michael Conley

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Richard Conley

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Boston University, JD

Kelly Conn

Associate Teaching Professor, College of Professional Studies; Boston University, PhD

Adam I. Cooper

Senior Lecturer, Linguistics; Cornell University, PhD

Seth Cooper

Assistant Professor, Computer and Information Science; University of Washington, PhD

Gene D. Cooperman

Professor, Computer and Information Science; Brown University, PhD

Ryan Cordell

Assistant Professor, English; University of Virginia, PhD

Marie B. Corkery

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Patricia Corrigan

Assistant Cooperative Education Coordinator, College of Science; Suffolk University, MA

Felipe Cortes

Assistant Professor, Finance; Washington University, St. Louis, PhD

Xavier Costa

Professor, Architecture; University of Pennsylvania, PhD

Hugh G. Courtney

Professor, International Business and Strategy; Massachusetts Institute of Technology, PhD

Arthur J. Coury

University Distinguished Professor, Chemical Engineering; University of Minnesota, PhD

Erin J. Cram

Professor, Biology; University of California, Berkeley, PhD

Frederick Crane

Senior Academic Specialist, Entrepreneurship and Innovation; Bradford University, PhD

Justin D. Crane

Assistant Professor, Biology; McMaster University (Canada), PhD

Steven Cranford

Assistant Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

William F. Crittenden

Professor, International Business and Strategy; University of Arkansas, PhD

Maia Cross

Associate Professor, Political Science and International Affairs; Princeton University, PhD

Robert Cross

Assistant Teaching Professor, History; Princeton University, PhD

Pedro Miguel Cruz

Assistant Professor, Art + Design; Universidade de Coimbra (Portugal), PhD

Alvaro Cuervo-Cazurra

Professor and Robert Morrison Fellow, International Business and Strategy; Massachusetts Institute of Technology, PhD

Carlos Cuevas

Associate Professor, Criminology and Criminal Justice; Alliant International University, PhD

Meng Cui

Research Associate Professor, Pharmaceutical Sciences; Jilin University (China), PhD

Thomas P. Cullinane

Professor, Mechanical and Industrial Engineering; Virginia Polytechnic Institute and State University, PhD

Derek Curry

Assistant Professor, Art + Design; University of California, Los Angeles, MFA

Mary Ellen Cushman

Professor, English; Rensselaer Polytechnic Institute, PhD

Julia Cybularz

Visiting Associate Teaching Professor, Art + Design; School of Visual Arts, MFA

Kamran Dadkhah

Associate Professor, Economics; Indiana University, PhD

Guohao Dai

Associate Professor, Bioengineering; Massachusetts Institute of Technology, PhD

Elise J. Dallimore

Associate Professor, Communication Studies; University of Washington, PhD

James Dana Jr.

Professor, Economics and International Business and Strategy; Massachusetts Institute of Technology, PhD

Luis Dau

Associate Professor, International Business and Strategy; University of South Carolina, PhD

Geoffrey Davies

Matthews Distinguished University Professor, Chemistry and Chemical Biology; Birmingham University (United Kingdom), PhD, DSc

Duncan Davis

Assistant Teaching Professor, Engineering; North Carolina State University, PhD

Frederick C. Davis

Professor, Biology; University of Texas, Austin, PhD

Nicole Davis

Assistant Clinical Professor, Applied Psychology; Simmons College, MS

Theo Davis

Professor, English; Johns Hopkins University, PhD

Leslie Day

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Anthony P. De Ritis

Professor, Music; University of California, Berkeley, PhD

Michael Dean

Assistant Teaching Professor, College of Professional Studies; Columbia University, PhD

Adenekan (Nick) Dedeke

Lecturer, Supply Chain and Information Management; Technische Universität Kaiserslautern (Germany), PhD

Mohammad Dehghanimohammadabadi

Assistant Teaching Professor, Mechanical and Industrial Engineering; Western New England University, PhD

Candice Delmas

Assistant Professor, Philosophy and Religion and Political Science; Boston University, PhD

John Dencker

Professor, Management and Organizational Development; Harvard University, PhD

Jack Dennerlein

Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of California, PhD

Megan Denver

Assistant Professor, Criminology and Criminal Justice; University at Albany, PhD

Alexander DePaoli

Visiting Assistant Professor, Marketing; Stanford University, PhD

Leila F. Deravi

Assistant Professor, Chemistry and Chemical Biology; Vanderbilt University, PhD

Nate Derbinsky

Associate Teaching Professor, Computer and Information Science; University of Michigan, Ann Arbor, PhD

Marco Deseriis

Assistant Professor, Media and Screen Studies; New York University, PhD

Peter J. Desnoyers

Associate Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

David A. DeSteno

Professor, Psychology; Yale University, PhD

H. William Detrich

Professor, Marine and Environmental Sciences; Yale University, PhD

Darin Detwiler

Assistant Teaching Professor, College of Professional Studies; Northeastern University, PhD

John W. Devlin

Professor, Pharmacy and Health Systems Sciences; University of Toronto (Canada), PharmD

James Dew

Visiting Lecturer, Economics; Texas AM University, PhD

Janet Dewan

Assistant Clinical Professor, Nursing; Northeastern University, PhD

Alessandra Di Credico

Lecturer, Physics; University of Rome (Italy), PhD

Panagoula Diamanti-Karanou

Visiting Lecturer, Political Science and International Affairs; Northeastern University, PhD

Jacqueline Diani

Senior Cooperative Education Coordinator, Bouvé College of Health Sciences; University of Virginia, MEd

Martin Dias

Associate Teaching Professor, Supply Chain and Information Management; Bentley University, PhD

Amy DiBattista

Lecturer, Psychology; Northeastern University, PhD

William Dickens

Professor, Economics and Public Policy and Urban Affairs; Massachusetts Institute of Technology, PhD

Elizabeth Dillon

Professor, English; University of California, Berkeley, PhD

Charles DiMarzio

Associate Professor, Electrical and Computer Engineering; Northeastern University, PhD

Aidong A. Ding

Associate Professor, Mathematics; Cornell University, PhD

Kathleen C. Dioli

Associate Cooperative Education Coordinator, Chemistry and Chemical Biology; Bowling Green State University, MA

Brandon Dionne

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of New England, PharmD

Daniel L. Distel

Research Professor, Marine and Environmental Sciences; University of California, San Diego, PhD

Margarita V. DiVall

Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Mary Kate Dodgson

Assistant Professor, Accounting; University of Massachusetts, Amherst, PhD

Lisa Cantwell Doherty

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MA

Silvia Dominguez

Associate Professor, Sociology and Anthropology; Boston University, PhD

Hua Dong

Associate Academic Specialist, World Languages Center; Emerson College, MA

Pamela Donlan

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Margaret Dougherty

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, EdD

Brenda Douglas

Associate Clinical Professor, Nursing; Northeastern University, DNP

Daniel C. Douglass

Lecturer, Marine and Environmental Sciences; University of Wisconsin, PhD

Mark Douglass

Associate Clinical Professor, Pharmacy and Health Systems Sciences; University of Michigan, PharmD

Kevin Drakulich

Associate Professor, Criminology and Criminal Justice; University of Washington, PhD

Andrea Dropkin

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Bentley University, MBA

Laura Dudley

Assistant Clinical Professor, Applied Psychology; Northeastern University, PhD

Lisa Duffy

Assistant Professor, Nursing; Boston College, DNP

Tara Duffy

Lecturer, Marine and Environmental Sciences; Stony Brook University, PhD

Molly Dugan

Assistant Teaching Professor, College of Professional Studies; Boston College, PhD

Michael Dukakis

Distinguished Professor, Political Science; Harvard University, JD

Daniel M. Dulaski

Teaching Professor, Civil and Environmental Engineering; University of Massachusetts, Amherst, PhD

Catherine Dunand

Assistant Academic Specialist, World Languages Center; Boston University, MA

Jill Dupree

Visiting Lecturer, Economics; University of Colorado, Boulder, PhD

Joanne Dupuis

Assistant Clinical Professor, Nursing; Massachusetts School of Law, PhD

Kathleen Durant

Assistant Teaching Professor, Computer and Information Science; Harvard University, PhD

Jennifer G. Dy

Professor, Electrical and Computer Engineering; Purdue University, PhD

Eno Ebong

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Stephanie Eby

Lecturer, Marine and Environmental Sciences; Syracuse University, PhD

Rajagopal Echambadi

Professor, Entrepreneurship and Innovation; University of Houston, PhD

Matthew Eckelman

Assistant Professor, Civil and Environmental Engineering; Yale University, PhD

Kimberly Eddleston

Professor and Daniel and Dorothy Grady Faculty Fellow, Entrepreneurship and Innovation; University of Connecticut, PhD

Scott Edmiston

Professor of the Practice, Theatre; Boston University, MFA

Laurie Edwards

Associate Teaching Professor, Writing Program; Emerson College, MFA

Jessica Edwards George

Associate Clinical Professor, Applied Psychology; Northeastern University, PhD

Christopher L. Egan

Assistant Cooperative Education Coordinator, College of Science; Boston University, MA

Jean Egan

Senior Cooperative Education Coordinator, College of Social Sciences and Humanities; Northeastern University, MEd

Robert C. Eidson

Lecturer, Psychology; Northeastern University, PhD

Stanley J. Eigen

Professor, Mathematics; McGill University (Canada), PhD

Adam Ekenseair

Assistant Professor, Chemical Engineering; University of Texas, Austin, PhD

Ehsan Elhamifar

Assistant Professor, Computer and Information Science; Johns Hopkins University, PhD

Tina Eliassi-Rad

Associate Professor, Computer and Information Science; University of Wisconsin, Madison, PhD

B. Parker Ellen

Assistant Professor, Management and Organizational Development; Florida State University, PhD

Ryan Ellis

Assistant Professor, Communication Studies; University of California, San Diego, PhD

Constance Emerson

Assistant Academic Specialist, College of Professional Studies; Purdue University, West Lafayette, MS

John R. Engen

Distinguished Professor, Chemistry and Chemical Biology and Barnett Institute; University of Nebraska, Lincoln, PhD

Christen Enos

Associate Teaching Professor, Writing Program; Emerson College, MFA

Slava S. Epstein

Distinguished Professor, Biology; Moscow State University (Russia), PhD

Randall Erb

Assistant Professor, Mechanical and Industrial Engineering; Duke University, PhD

Deniz Erdogmus

Professor, Electrical and Computer Engineering; University of Florida, PhD

Ozlem Ergun

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Cuneyt Eroglu

Associate Professor, Supply Chain and Information Management; Ohio State University, PhD

Bilge Erten

Assistant Professor, International Affairs and Economics; University of Massachusetts, Amherst, PhD

Rhea T. Eskew

Professor, Psychology; Georgia Institute of Technology, PhD

Jonathan Esole

Assistant Professor, Mathematics; Leiden University (Netherlands), PhD

Abigail Evans

Lecturer, Computer and Information Science; University of Washington, PhD

Sara Ewell

Associate Teaching Professor, College of Professional Studies; University of North Carolina, Chapel Hill, PhD

William Ewell

Associate Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Daniel Faber

Professor, Sociology and Anthropology; University of California, Santa Cruz, PhD

Mary Lynn Fahey

Clinical Instructor, Nursing; Simmons College, MS

Olunmi Faleye

Professor and Donald F. Harding Professor of Finance and Insurance, Finance; University of Alberta (Canada), PhD

Hui Fang

Assistant Professor, Electrical and Computer Engineering; University of California, Berkeley, PhD

Qianqian Fang

Assistant Professor, Bioengineering; Dartmouth College, PhD

David Fannon

Assistant Professor, Architecture and Civil and Environmental Engineering; University of California, Berkeley, MS

Nasser S. Fard

Associate Professor, Mechanical and Industrial Engineering; University of Arizona, PhD

Amir Farhat

Associate Teaching Professor, Electrical and Computer Engineering; University of Pennsylvania, PhD

Amy Farrell

Associate Professor, Criminology and Criminal Justice; Northeastern University, PhD

Yunsi Fei

Professor, Electrical and Computer Engineering; Princeton University, PhD

Adrian E. Feiguin

Assistant Professor, Physics; Universidad Nacional de Rosario (Argentina), PhD

Allen G. Feinstein

Teaching Professor, Music; New England Conservatory of Music, MM

Nathan I. Felde

Professor, Art + Design; Massachusetts Institute of Technology, MS

Lisa Feldman Barrett

University Distinguished Professor, Psychology; University of Waterloo (Canada), PhD

Matthias Felleisen

Trustee Professor, Computer and Information Science; Indiana University, PhD

Samuel Felton

Assistant Professor, Mechanical and Industrial Engineering; Harvard University, PhD

Carol Femia

Clinical Instructor, Nursing; Massachusetts General Hospital Institute of Health Professions, MS

Hicham Fenniri

Professor, Chemical Engineering; Université de Strasbourg (France), PhD

Loretta A. Fernandez

Assistant Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Massachusetts Institute of Technology, PhD

Waththage N. Fernando

Lecturer, Mathematics; University of South Florida, PhD

Lori Ferrins

Research Assistant Professor, Chemistry and Chemical Biology; Monash University, PhD

Craig F. Ferris

Professor, Psychology and Pharmaceutical Sciences; New York Medical College, PhD

Kirsten Fertuck

Assistant Teaching Professor, Biochemistry; Michigan State University, PhD

Susan F. Fine

Clinical Instructor, Communication Sciences and Disorders; New York University, MA

Sarah Finn

Associate Teaching Professor, Writing Program; University of Massachusetts, Amherst, PhD

Branden Fitelson

Distinguished Professor, Philosophy and Religion; California Institute of Technology, PhD

Brian Fitzgerald

Assistant Professor, Accounting; Texas AM University, PhD

Joan Fitzgerald

Professor, Public Policy and Urban Affairs; Pennsylvania State University, PhD

Diane F. Fitzpatrick

Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Josephine Flanagan

Assistant Cooperative Education Coordinator, College of Engineering; Suffolk University, JD

Julia Flanders

Professor of the Practice, English and Library Systems; Brown University, PhD

Laure B. Flapan

Zelevinsky Research Professor, Mathematics; University of California, Los Angeles, PhD

Eric Folmar

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Quinnipiac University, MS

Paul Fombelle

Associate Professor and Thomas Moore Faculty Fellow, Marketing; Arizona State University, PhD

Murray Forman

Professor, Media and Screen Studies; McGill University (Canada), PhD

Lisa M. Foster

Assistant Cooperative Education Coordinator, Bouvé College of Health Sciences; Northeastern University, MS

Dimitrios Fotiadis

Lecturer, Supply Chain and Information Management; Northeastern University, MS

Brooke Foucault Welles

Assistant Professor, Communication Studies; Northwestern University, PhD

Charles F. Fountain

Professor, Journalism; Columbia University, MS

James Fox

Lipman Family Professor of Criminology, Law, and Public Policy, Criminology and Criminal Justice and Law and Public Policy; University of Pennsylvania, PhD

Laura Frader

Professor, History; University of Rochester, PhD

Debra L. Franko

Professor, Applied Psychology; McGill University (Canada), PhD

Peter Fraunholtz

Assistant Teaching Professor, History and International Affairs; Boston College, PhD

Susan Freeman

Teaching Professor, Engineering; Northeastern University, PhD

Clark Freifeld

Lecturer, Computer and Information Science; Boston University, PhD

Michael Frengel

Associate Academic Specialist, Music; City University London (United Kingdom), PhD

John H. Friar

Senior Academic Specialist, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Natasha Frost

Professor, Criminology and Criminal Justice; City University of New York, PhD

Yun (Raymond) Fu

Associate Professor, Electrical and Computer Engineering and Computer and Information Science; University of Illinois, Urbana-Champaign, PhD

Carolyn Fuchs

Teaching Professor, World Languages Center; Justus-Liebig Universität Gießen (Germany), PhD

Brian Fulton

Lecturer, Chemistry and Chemical Biology; Iowa State University, PhD

Peter G. Furth

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Timothy Gagnon

Associate Academic Specialist, Accounting; Sacred Heart University, MBA

Sean Gallagher

Assistant Clinical Professor, College of Professional Studies; Northeastern University, EdD

Susan Gallagher

Clinical Instructor, Nursing; Massachusetts General Hospital Institute of Health Professions, MS

Joshua Galloway

William O. DiPietro Assistant Professor, Chemical Engineering; Columbia University, PhD

Auroop Ganguly

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Lori Gardinier

Teaching Professor, Human Services; Northeastern University, PhD

Julie Garey

Assistant Teaching Professor, Political Science; Northeastern University, PhD

Karen Garneau

Associate Teaching Professor, Writing Program; Northeastern University, PhD

Shytierra Gaston

Assistant Professor, Criminology and Criminal Justice; University of Missouri, St. Louis, PhD

Wolfgang Gatterbauer

Associate Professor, Computer and Information Science; Vienna University of Technology (Austria), PhD

Edward Geisinger

Assistant Professor, Biology; New York University, MD, PhD

Prasanth George

Assistant Teaching Professor, Mathematics; State University of New York, Buffalo, PhD

Francis Georges

Assistant Teaching Professor, Economics; Boston College, PhD

Roger W. Giese

Professor, Pharmaceutical Sciences; Massachusetts Institute of Technology, PhD

Joseph M. Giglio

Senior Academic Specialist, International Business and Strategy; Northeastern University, PhD

Thomas R. Gilbert

Associate Professor, Chemistry and Chemical Biology; Massachusetts Institute of Technology, PhD

Laurance Ginsberg

Assistant Academic Specialist, Accounting; Bentley University, MST

Karen Giuliano

Associate Professor, Nursing; Boston College, PhD

Daniel G. Glasscock

Zelevinsky Research Professor, Mathematics; Ohio State University, PhD

Leonard J. Glick

Senior Academic Specialist, Management and Organizational Development; Harvard University, EdD

Elizabeth Glowacki

Postdoctoral Teaching Associate, Communication Studies; University of Texas, Austin, PhD

Daniel Godfrey

Professor, Music; University of Iowa, PhD

Veronica S. Godoy-Carter

Associate Professor, Biology; Tufts University, PhD

Kevin Gold

Assistant Teaching Professor, Computer and Information Science; Yale University, PhD

Natalia Gold

Assistant Teaching Professor, International Business and Strategy; Saint Petersburg State University of Engineering (Russia), PhD

Stephen Golden

Lecturer, Entrepreneurship and Innovation; Suffolk University, MBA

William Goldman

Lecturer, Accounting; Northeastern University, MBA

Ann C. Golub-Victor

Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Edgar D. Goluch

Associate Professor, Chemical Engineering; University of Illinois, Urbana-Champaign, PhD

Kathleen Gonso

Associate Teaching Professor, Writing Program; Emerson College, MFA

Michael J. Gonyeau

Clinical Professor, Pharmacy and Health Systems Sciences; Albany College of Pharmacy, PharmD

Frankie Gonzalez

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, BS

Gregory Goodale

Associate Professor, Communication Studies; University of Illinois, Urbana-Champaign, PhD

Teresa Goode

Assistant Teaching Professor, College of Professional Studies; Columbia University, EdD

Patricia Goodman

Assistant Teaching Professor, College of Professional Studies; George Washington University, EdD

Matthew Goodwin

Associate Professor, Health Sciences and Computer and Information Science; University of Rhode Island, PhD

Mark Gooley

Lecturer, Finance; Northeastern University, PhD

Ian Gorton

Professor of the Practice, Computer and Information Science; Sheffield Hallam University (United Kingdom), PhD

Gary Goshgarian

Professor, English; University of Wisconsin, Madison, PhD

Tarik C. Gouhier

Assistant Professor, Marine and Environmental Sciences; McGill University (Canada), PhD

Robson Goulart

Assistant Cooperative Education Coordinator, College of Engineering;
Boston University, MS

Andrew Gouldstone

Associate Professor, Mechanical and Industrial Engineering;
Massachusetts Institute of Technology, PhD

Jonathan H. Grabowski

Associate Professor, Marine and Environmental Sciences; University of
North Carolina, Chapel Hill, PhD

Jennifer Gradecki

Assistant Professor, Art + Design; University of California, Los Angeles,
MFA

Steve Granelli

Assistant Teaching Professor, Communication Studies; Syracuse
University, MS

Laura Green

Professor, English; University of California, Berkeley, PhD

Kristin Curry Greenwood

Associate Clinical Professor, Physical Therapy, Movement, and
Rehabilitation Sciences; Northeastern University, EdD, DPT

Brent Griffin

Assistant Teaching Professor, College of Professional Studies;
Northeastern University, PhD

Jacqueline Griffin

Assistant Professor, Mechanical and Industrial Engineering; Georgia
Institute of Technology, PhD

Joseph Griffin

Associate Teaching Professor, College of Professional Studies; Gordon
Conwell Theological Seminary, PhD

John Griffith

Clinical Professor, Health Sciences; Boston University, PhD

Amir Grinstein

Associate Professor, Mark L. and Karen D. Vachon Faculty Fellow,
Marketing; Hebrew University of Jerusalem (Israel), PhD

Francesca Grippa

Associate Teaching Professor, College of Professional Studies; University
of Salento (Italy), PhD

Craig Gruber

Associate Teaching Professor, College of Professional Studies; Clark
University, PhD

Tiantian Gu

Associate Professor, Finance; University of Wisconsin, Madison, PhD

Jason J. Guo

Research Associate Professor, Barnett Institute; University of
Connecticut, PhD

Surendra M. Gupta

Professor, Mechanical and Industrial Engineering; Purdue University, PhD

Andrei Guschin

Assistant Teaching Professor, Graduate School of Engineering; Russian
Academy of Sciences (Russian Federation), PhD

Philip Gust

Clinical Instructor, Computer and Information Science; University of
Arizona, MS

Barbara Guthrie

Professor, Nursing; New York University, PhD

Mohamed Habibullah

Assistant Teaching Professor, Supply Chain and Information
Management; University of Missouri, Columbia, PhD

David Hagen

Assistant Teaching Professor, College of Professional Studies; New
England School of Law, JD

Michelle Hagopian

Assistant Cooperative Education Coordinator, College of Arts, Media and
Design; University of Illinois, MS

Jerome F. Hajjar

CDM Smith Professor in Civil Engineering, Civil and Environmental
Engineering; Cornell University, PhD

Golnoosh Hakimdavar

Associate Teaching Professor, College of Professional Studies; University
of Turin (Italy), PhD

Danielle Haley

Assistant Professor, Health Sciences; Emory University, PhD

Judith A. Hall

University Distinguished Professor, Psychology; Harvard University, PhD

James Halverson

Assistant Professor, Physics; University of Pennsylvania, PhD

Pauline Hamel

Associate Clinical Professor, Health Sciences; Boston University, EdD

Paul Hand

Assistant Professor, Mathematics and Computer and Information
Science; New York University, PhD

Michael Handel

Associate Professor, Sociology and Anthropology; Harvard University,
PhD

Nancy Hanrahan

Professor, Nursing; Boston College, PhD

Robert N. Hanson

Matthews Distinguished University Professor, Chemistry and Chemical
Biology; University of California, Berkeley, PhD

Sharon Harlan

Professor, Health Sciences and Sociology and Anthropology; Cornell
University, PhD

Kelly Harrington

Associate Cooperative Education Coordinator, D'Amore-McKim School of
Business; Suffolk University, MBA

Shaunna Harrington

Associate Academic Specialist, College of Professional Studies; Boston
University, MA

Vincent Harris

University Distinguished Professor, William Lincoln Smith Professor of Electrical and Computer Engineering, Electrical and Computer Engineering; Northeastern University, PhD

Vanecia Harrison

Associate Cooperative Education Coordinator, College of Science; Emmanuel College, MA

Casper Harteveld

Assistant Professor, Game Design; Delft University of Technology (Netherlands), PhD

Woodrow Hartzog

Professor, Law and Computer and Information Science; University of North Carolina, Chapel Hill, PhD

Christopher Hasson

Assistant Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of Massachusetts, Amherst, PhD

Heather Hauck

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Claudia Haupt

Associate Professor, Law and Political Science; Columbia University, JSD; University of Cologne (Germany), PhD

Thomas Havens

Professor, History; University of California, Berkeley, PhD

Lorna Hayward

Associate Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Boston University, EdD

Haikun He

Assistant Academic Specialist, College of Professional Studies; Columbia University, MEd

Julia Hechtman

Lecturer, Art + Design; University of Illinois, Chicago, MFA

Meghan Heckman

Assistant Professor, Journalism; Northeastern University, MA

Gretchen Heefner

Associate Professor, History; Yale University, PhD

Donald E. Heiman

Professor, Physics; University of California, Irvine, PhD

Amy Helburn

Lorraine C. Snell Visiting Professor, Health Sciences; University of Massachusetts, PhD

Brian Helmuth

Professor, Marine and Environmental Sciences and Public Policy and Urban Affairs; University of Washington, PhD

Jason Hemann

Lecturer, Computer and Information Science; Indiana University, PhD

Carlene Hempel

Associate Teaching Professor, Journalism; University of North Carolina, Chapel Hill, MA

Dale Herbeck

Professor, Communication Studies; University of Iowa, PhD

Angela Herbert

Assistant Academic Specialist, American Sign Language; Northeastern University, BS

David A. Herlihy

Teaching Professor, Music; Boston College, JD

Catalina Herrera Almanza

Assistant Professor, Economics and International Affairs; Cornell University, PhD

Carie Hersh

Assistant Teaching Professor, Sociology and Anthropology; Duke University, JD

Kelsey Hersh

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MS

Joshua Hertz

Assistant Teaching Professor, Engineering; Massachusetts Institute of Technology, PhD

Benjamin Hescott

Teaching Professor, Computer and Information Science; Boston University, PhD

Kamber Hetrick

Assistant Professor, Accounting; University of Illinois, Urbana-Champaign, PhD

Babak Heydari

Associate Professor, Mechanical and Industrial Engineering; University of California, Berkeley, PhD

Mary J. Hickey

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Carlos Hidrovo Chavez

Assistant Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Logan M. Higgins

Lecturer, Biology; Massachusetts Institute of Technology, PhD

Malcolm D. Hill

Associate Professor, Marine and Environmental Sciences; University of California, Santa Cruz, PhD

Charles H. Hillman

Professor, Psychology and Health Sciences; University of Maryland, College Park, PhD

Robin Hillyard

Associate Teaching Professor, Graduate School of Engineering; Cambridge University (United Kingdom), PhD

John Hinson

Assistant Teaching Professor, Theatre; Brandeis University, MFA

Tad Hirsch

Professor, Art + Design; Massachusetts Institute of Technology, PhD

Hubert Ho

Lecturer, Music; University of California, Berkeley, PhD

Marie Odile Hobeika

Postdoctoral Teaching Associate, Communication Studies; University of Pittsburgh, PhD

Lynda Hodgson

Associate Teaching Professor, College of Professional Studies; Virginia Commonwealth University, PhD

Timothy Hoff

Professor, Management and Organizational Development and Public Policy and Urban Affairs; State University of New York, Albany, PhD

Jessica Hoffman

Associate Professor, Applied Psychology; Lehigh University, PhD

Uwe Hohgrawe

Assistant Teaching Professor, College of Professional Studies; University of Wuppertal (Germany), PhD

Udi Hoitash

Associate Professor and Cowan Research Professor, Accounting; Rutgers University, PhD

Trenton Honda

Assistant Clinical Professor, Physician Assistant Program; Northeastern University, PhD

Michael J. Hoppmann

Associate Teaching Professor, Communication Studies; University of Tübingen (Germany), PhD

Adam Hosein

Associate Professor, Philosophy and Religion; Massachusetts Institute of Technology, PhD

Elizabeth M. Howard

Associate Professor, Nursing; Boston College, PhD

Jeffrey P. Howe

Assistant Professor, Journalism; Boston University, MFA

Hanchen Huang

Donald D. Smith Professor in Mechanical Engineering, Mechanical and Industrial Engineering; University of California, Los Angeles, PhD

Anne R. Hughes

Associate Professor, Marine and Environmental Sciences; University of California, Davis, PhD

Francisco Hung

Associate Professor, Chemical Engineering; North Carolina State University, PhD

Matthew Hunt

Professor, Sociology and Anthropology; Indiana University, PhD

Patrick Hurley

Assistant Professor, Accounting; University of Wisconsin, Madison, PhD

Mark Huselid

Distinguished Professor of Workforce Analytics, International Business and Strategy; State University of New York, Buffalo, PhD

Roxana E. Iacob

Research Associate Professor, Chemistry and Chemical Biology; Konstanz University (Germany), PhD

Anthony Iarrobino

Professor, Mathematics; Massachusetts Institute of Technology, PhD

Patricia Illingworth

Professor, Philosophy and Religion; University of California, San Diego, PhD; Boston University, JD

Jennifer Ingemi

Assistant Teaching Professor, Behavioral Neuroscience; University of Massachusetts, PhD

Vinay K. Ingle

Associate Professor, Electrical and Computer Engineering; Rensselaer Polytechnic Institute, PhD

Francesca Inglese

Assistant Professor, Music; Brown University, PhD

Rei Inouye

Associate Teaching Professor, World Languages Center; Temple University, PhD

Stephen S. Intille

Associate Professor, Computer and Information Science and Health Sciences; Massachusetts Institute of Technology, PhD

Efstratios Ioannidis

Assistant Professor, Electrical and Computer Engineering; University of Toronto (Canada), PhD

Roderick Ireland

Distinguished Professor, Criminology and Criminal Justice; Harvard University, LL.M.; Northeastern University, PhD

Derek M. Isaacowitz

Professor, Psychology; University of Pennsylvania, PhD

Jacqueline A. Isaacs

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Michelle L. Israel

Associate Cooperative Education Coordinator, College of Science; Northeastern University, MS

Nathan E. Israeloff

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Alexander R. Ivanov

Associate Professor, Chemistry and Chemical Biology; Russian Academy of Science, Institute of Bioorganic Chemistry (Moscow), PhD

Maura Daly Iversen

Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Harvard University, SD; Massachusetts General Hospital Institute of Health Professions, DPT

Julia Ivy

Associate Teaching Professor, International Business and Strategy; Lancaster University (United Kingdom), PhD

Denise Jackson

Associate Professor, Psychology; University of Pittsburgh, PhD

Ellen Jackson

Assistant Teaching Professor, Writing Program; Stanford University, MFA

Sarah Jackson

Assistant Professor, Communication Studies; University of Minnesota, PhD

William J. Jackson

Senior Cooperative Education Coordinator, College of Arts, Media and Design; University of Massachusetts, Boston, MEd

Michelle Jacobs

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of California, San Francisco, PharmD

Beverly Jaeger-Helton

Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Michael Jaeggli

Assistant Teaching Professor, Bioengineering; Clemson University, PhD

Nader Jalili

Professor, Mechanical and Industrial Engineering; University of Connecticut, PhD

Safa Jamali

Assistant Professor, Mechanical and Industrial Engineering; Case Western Reserve University, PhD

Bogume Jang

Lecturer, Mathematics; Purdue University, PhD

Solomon M. Jekel

Associate Professor, Mathematics; Dartmouth College, PhD

Qingying Jia

Research Assistant Professor, Chemistry and Chemical Biology; Illinois Institute of Technology, PhD

Benedict Jimenez

Associate Professor, Political Science; University of Illinois, Chicago, PhD

Holly Jimison

Professor of the Practice, Computer and Information Science and Nursing; Stanford University, PhD

Xiaoning Jin

Assistant Professor, Mechanical and Industrial Engineering; University of Michigan, PhD

Xuemin Jin

Associate Teaching Professor, Mechanical and Industrial Engineering; University of Maryland, PhD

Donghee Jo

Assistant Professor, Economics; Duke University, MA

Dinesh John

Assistant Professor, Health Sciences; University of Tennessee, PhD

Brooke Johnson

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MEd

Steven Johnson

Assistant Cooperative Education Coordinator, College of Engineering; Suffolk University, MS

Vanessa D. Johnson

Associate Professor, Applied Psychology; Western Michigan University, PhD

Kimberly Jones

Associate Teaching Professor, International Affairs; Northeastern University, PhD

Rachel Jones

Associate Professor, Nursing; New York University, PhD

Thomas Jones

Associate Professor, Sociology and Anthropology and Sociology and Anthropology; Princeton University, PhD

Dierdre Jordan

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Northeastern University, MS

Tiffany Joseph

Associate Professor, Sociology and Anthropology and International Affairs; University of Michigan, PhD

Alison Joyce

Assistant Cooperative Education Coordinator, College of Engineering; Ohio University, MEd

Maria Jump

Associate Teaching Professor, Computer and Information Science; University of Texas, Austin, PhD

Yung Joon Jung

Professor, Mechanical and Industrial Engineering; Rensselaer Polytechnic Institute, PhD

Jeffrey Juris

Associate Professor, Sociology and Anthropology; University of California, Berkeley, PhD

David R. Kaeli

College of Engineering Distinguished Professor, Electrical and Computer Engineering; Rutgers University, PhD

Sallyann Kakas

Assistant Cooperative Education Coordinator, Finance; Northeastern University, BS

Jayant Kale

Professor and Philip R. McDonald Chair, Finance; University of Texas, Austin, PhD

Sagar V. Kamarthi

Professor, Mechanical and Industrial Engineering; Pennsylvania State University, PhD

John Kane

Lecturer, Art + Design; Yale University, BA

Mary M. Kane

Senior Cooperative Education Coordinator, D'Amore-McKim School of Business; University of Massachusetts, Boston, MEd

Michael Kane

Assistant Professor, Civil and Environmental Engineering; University of Michigan, PhD

Sarah Kanouse

Associate Professor, Art + Design; University of Illinois, Urbana-Champaign, MFA

Carla Kaplan

Davis Distinguished Professor in American Literature, English and Women's, Gender, and Sexuality Studies; Northwestern University, PhD

Swastik Kar

Associate Professor, Physics; Indian Institute of Physics (India), PhD

Samina Karim

Professor, Entrepreneurship and Innovation; University of Michigan, PhD

Alain S. Karma

College of Arts and Sciences Distinguished Professor, Physics; University of California, Santa Barbara, PhD

Edward Katz

Associate Teaching Professor, Computer and Information Science; University of Louisiana, Lafayette, PhD

Ralph Katz

Professor, Entrepreneurship and Innovation; University of Pennsylvania, PhD

Jonathan Kaufman

Professor, Journalism; Harvard University, MA

William Kay

Associate Professor, Political Science; Indiana University, PhD

Bret Keeling

Associate Teaching Professor, Writing Program; University of Washington, PhD

Maureen Kelleher

Associate Professor, Sociology and Anthropology; University of Missouri, Columbia, PhD

Karen P. Kelley

Senior Cooperative Education Coordinator, College of Engineering; Northeastern University, MEd

Ryann Kelley

Associate Cooperative Education Coordinator, Finance; Northeastern University, MEd

Thomas M. Kelley

Lecturer, Physics; University of Minnesota, PhD

Kathleen Kelly

Professor, English; University of North Carolina, Chapel Hill, PhD

Mary Kelting

Associate Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Daniel D. Kennedy

Associate Professor, Journalism; Boston University, MLA

Aileen Kent Yates

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Massachusetts, Amherst, BA

Heidi Kevoe Feldman

Associate Professor, Communication Studies; Rutgers University, PhD

Leila Keyvani Someh

Assistant Teaching Professor, Engineering; Northeastern University, PhD

Ban-An Khaw

Professor, Pharmaceutical Sciences; Boston College, PhD

Konstantin Khrapko

Professor, Biology and Pharmaceutical Sciences; Engelhardt Institute of Molecular Biology, Moscow (Russia), PhD

Ilham Khuri-Makdisi

Associate Professor, History; Harvard University, PhD

Sheri Kiami

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Simmons College, DPT

Angela Kilby

Assistant Professor, Economics; Massachusetts Institute of Technology, PhD

Daniel Kim

Associate Professor, Health Sciences; University of Toronto (Canada), MD; Harvard University, PhD

Eunsong Kim

Assistant Professor, English; University of Texas, Austin, PhD

Jonghan Kim

Assistant Professor, Pharmaceutical Sciences; Ohio State University, PhD

Miso Kim

Assistant Professor, Art + Design; Carnegie Mellon University, PhD

Nancy S. Kim

Associate Professor, Psychology; Yale University, PhD

Somy Kim

Associate Teaching Professor, Writing Program; University of California, San Diego, PhD

Tiffany Kim

Assistant Clinical Professor, Nursing; University of Pennsylvania, PhD

Yong-Bin Kim

Professor, Electrical and Computer Engineering; Colorado State University, PhD

John Kimani

Assistant Teaching Professor, Electrical and Computer Engineering; University of Wisconsin, Milwaukee, PhD

David L. Kimbro

Assistant Professor, Marine and Environmental Sciences; University of California, Davis, PhD

Nancy Kimelman

Assistant Teaching Professor, Economics; Brown University, PhD

Nancy Kindelan

Professor, Theatre; University of Wisconsin, Madison, PhD

Christopher K. King

Professor, Mathematics; Harvard University, PhD

Donald R. King

Associate Professor, Mathematics; Massachusetts Institute of Technology, PhD

Margaret Kirchoff

Assistant Teaching Professor, College of Professional Studies; George Washington University, EdD

Engin Kirda

Professor, Computer and Information Science and Electrical and Computer Engineering; Technical University of Vienna (Austria), PhD

Rein U. Kirss

Associate Professor, Chemistry and Chemical Biology; University of Wisconsin, Madison, PhD

Jennifer L. Kirwin

Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Risa Kitagawa

Assistant Professor, Political Science and International Affairs; Stanford University, PhD

Mark Kjellman

Assistant Teaching Professor, Writing Program; Boston University, PhD

Alan Klein

Professor, Sociology and Anthropology; State University of New York, Buffalo, PhD

Sarah Klionsky

Assistant Cooperative Education Coordinator, College of Science; University of Wisconsin, Madison, MA

Kristian Kloeckl

Associate Professor, Art + Design and Architecture; University of Venice (Italy), PhD

Thomas Koenig

Professor, Sociology and Anthropology; University of California, Santa Barbara, PhD

Mieczyslaw M. Kokar

Professor, Electrical and Computer Engineering; University of Wroclaw (Poland), PhD

Tali Konry

Assistant Professor, Pharmaceutical Sciences; Ben Gurion University (Israel), PhD

Constantin Konstantopoulos

Associate Teaching Professor, Graduate School of Engineering; Boston University, PhD

Abigail N. Koppes

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Ryan Koppes

Assistant Professor, Chemical Engineering; Rensselaer Polytechnic Institute, PhD

Sarah Kostanski

Assistant Cooperative Education Coordinator, College of Engineering; Framingham State University, MS

Ilka Kostka

Assistant Teaching Professor, College of Professional Studies; New York University, PhD

Harilaos Koutsopoulos

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, PhD

Linda Kowalcky

Professor of the Practice, Public Policy and Urban Affairs; Johns Hopkins University, PhD

Gregory J. Kowalski

Associate Professor, Mechanical and Industrial Engineering; University of Wisconsin, Madison, PhD

Sergey Kravchenko

Professor, Physics; Institute of Solid State Physics (Russia), PhD

Caroline Krehbiel

Visiting Assistant Professor, Applied Psychology; Lehigh University, PhD

Dmitri Krioukov

Associate Professor, Physics; Old Dominion University, PhD

Ganesh Krishnamoorthy

Professor, Accounting; University of Southern California, PhD

Karthik Krishnan

Associate Professor, Finance; Boston College, PhD

Louis J. Kruger

Associate Professor, Applied Psychology; Rutgers University, PsyD

Laura Kuhl

Assistant Professor, Public Policy and Urban Affairs and International Affairs; Tufts University, PhD

Abhishek Kumar

Assistant Teaching Professor, Mechanical and Industrial Engineering; University of Michigan, PhD

Venkat Kuppuswamy

Assistant Professor, Entrepreneurship and Innovation; Harvard Business School, DBA

Jessica Kurr

Postdoctoral Teaching Associate, Communication Studies; Pennsylvania State University, PhD

Steven R. Kursh

Associate Academic Specialist, Finance; University of Pennsylvania, PhD

John Kwoka

Neal F. Finnegan Distinguished Professor, Economics; University of Pennsylvania, PhD

Michelle Laboy

Assistant Professor, Architecture; University of Michigan, MArch

John LaBrie

Professor of the Practice, College of Professional Studies; University of Pennsylvania, EdD

Jamie Ladge

Associate Professor, Management and Organizational Development; Boston College, PhD

Jay Laird

Assistant Teaching Professor, College of Professional Studies; Lesley University, MFA

Venkatraman Lakshmbai

Professor, Mathematics; Tata University (India), PhD

Charlotte Lam

Assistant Cooperative Education Coordinator, College of Science; California State University, Sacramento, MA

Joan LaMachia

Associate Cooperative Education Coordinator, College of Social Sciences and Humanities; Boston College, MEd

Anna Lamin

Associate Professor and Matthew Eagan Faculty Fellow, International Business and Strategy; University of Minnesota, PhD

Jason Lancaster

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Massachusetts College of Pharmacy, PharmD

William Lancaster

Senior Lecturer, Communication Studies; Michigan State University, MA

Lucas J. Landherr

Associate Teaching Professor, Chemical Engineering; Cornell University, PhD

Theodore Landsmark

Distinguished Professor, Public Policy and Urban Affairs; Boston University, PhD

Henry W. Lane

Professor, International Business and Strategy; Harvard University, DBA

David Lang

Lecturer, Mathematics; Boston College, PhD; Northeastern University, PhD

Timothy Lannin

Assistant Teaching Professor, Bioengineering; Cornell University, PhD

Amy Lantinga

Associate Teaching Professor, College of Professional Studies; University of Tennessee, EdD

Denise Lapon Garcia

Associate Professor, Political Science and International Affairs; University of Geneva (Switzerland), PhD

Philip Larese-Casanova

Associate Professor, Civil and Environmental Engineering; University of Iowa, PhD

Sonya L. Larrieux

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, PhD

Barbara Larson

Associate Academic Specialist, Management and Organizational Development; Harvard Business School, DBA

Elizabeth Larson

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Northeastern University, MBA

Kimberly Larson

Associate Teaching Professor, College of Professional Studies; Drexel University, PhD

Felicia G. Lassk

Associate Professor, Marketing; University of South Florida, PhD

Amanda Reeser Lawrence

Associate Professor, Architecture; Harvard University, PhD

David M. Lazer

Distinguished Professor, Political Science and Computer and Information Science; University of Michigan, Ann Arbor, PhD

Christina Lee

Assistant Professor, Applied Psychology; New York University, PhD

Cynthia Lee

Professor, Management and Organizational Development; University of Maryland, PhD

Doreen Lee

Associate Professor, Sociology and Anthropology; Cornell University, PhD

Jung Lee

Associate Professor, Philosophy and Religion; Brown University, PhD

Kristen Lee

Associate Teaching Professor, College of Professional Studies; Northeastern University, EdD

Lee-Peng Lee

Lecturer, Mathematics; Massachusetts Institute of Technology, PhD

Matt Lee

Teaching Professor, Human Services; University of Illinois, Urbana-Champaign, PhD

Yang W. Lee

Associate Professor, Supply Chain and Information Management; Massachusetts Institute of Technology, PhD

Carolyn W. T. Lee-Parsons

Associate Professor, Chemical Engineering and Chemistry and Chemical Biology; Cornell University, PhD

Miriam E. Leeser

Professor, Electrical and Computer Engineering; Cambridge University (United Kingdom), PhD

Laurel Leff

Associate Professor, Journalism; Yale University, MA

Lori Lefkowitz

Ruderman Professor of Jewish Studies, Jewish Studies and English; Brown University, PhD

Patrick Legros

Distinguished Professor, Economics; California Institute of Technology, PhD

Bradley M. Lehman

Professor, Electrical and Computer Engineering; Georgia Institute of Technology, PhD

Robert Lentz

Associate Academic Specialist, Entrepreneurship and Innovation; Babson College, MBA

Benjamin Lerner

Assistant Teaching Professor, Computer and Information Science; University of Washington, PhD

Neal Lerner

Professor, English; Boston University, EdD

Marina Leslie

Associate Professor, English; Yale University, PhD

Hanoch Lev-Ari

Professor, Electrical and Computer Engineering; Stanford University, PhD

Danielle Levac

Assistant Professor, Physical Therapy, Movement, and Rehabilitation Sciences; McMaster University (Canada), PhD

Tatyana Levchenko

Research Assistant Professor, Pharmaceutical Sciences; Academy of Medical Sciences Moscow (Russia), PhD

Yiannis A. Leventis

College of Engineering Distinguished Professor, Mechanical and Industrial Engineering; California Institute of Technology, PhD

Elinor Levine

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; University of Massachusetts, Amherst, MEd

Herbert Levine

Professor, Physics and Bioengineering; Princeton University, PhD

Kim Lewis

University Distinguished Professor, Biology; Moscow University (Russia), PhD

Laura H. Lewis

Cabot Professor, Chemical Engineering and Mechanical and Industrial Engineering; University of Texas, Austin, PhD

David J. Lewkowicz

Professor, Communication Sciences and Disorders; City University of New York, Hunter College, PhD

Ang Li

Assistant Professor, Architecture; Princetown University, MArch

Chieh Li

Associate Professor, Applied Psychology; University of Massachusetts, Amherst, EdD

Rui Li

Associate Clinical Professor, Health Sciences; Baylor University, PhD

Robert Lieb

Professor, Supply Chain and Information Management; University of Maryland, DBA

Karl J. Lieberherr

Professor, Computer and Information Science; Eidgenössische Technische Hochschule Zürich (Switzerland), PhD

Karin N. Lifter

Professor, Applied Psychology; Columbia University, PhD

Xue Lin

Assistant Professor, Electrical and Computer Engineering; University of Southern California, PhD

Yingzi Lin

Associate Professor, Mechanical and Industrial Engineering; University of Saskatchewan (Canada), PhD

Alisa K. Lincoln

Professor, Sociology and Anthropology and Health Sciences; Columbia University, PhD

Katherine Lind

Postdoctoral Teaching Associate, Communication Studies; Indiana University, PhD

John J. Lindhe

Senior Lecturer, Mathematics; Northeastern University, MA

Gabor P. Lippner

Assistant Professor, Mathematics; Eotvos University (Hungary), PhD

James Lipsky

Associate Academic Specialist, American Sign Language; Boston University, MA

Heather A. Littlefield

Associate Teaching Professor, Linguistics; Boston University, PhD

Kelvin Liu

Associate Professor, Accounting; University of South Carolina, PhD

Xiaoping Liu

Visiting Assistant Professor, Supply Chain and Information Management; University of Massachusetts, Lowell, PhD

Yang Liu

Assistant Professor, Mechanical and Industrial Engineering; Columbia University, PhD

Yongmin Liu

Assistant Professor, Mechanical and Industrial Engineering and Electrical and Computer Engineering; University of California, Berkeley, PhD

Ioannis Livanis

Associate Teaching Professor, International Affairs and Political Science; University of Florida, PhD

Carol Livermore

Associate Professor, Mechanical and Industrial Engineering; Harvard University, PhD

Martha Loftus

Assistant Teaching Professor, College of Professional Studies; Harvard University, EdD

Diomedes E. Logothetis

Professor, Pharmaceutical Sciences; Harvard University, PhD

Mark Lomanno

Visiting Assistant Teaching Professor, Music; University of Texas, Austin, PhD

Fabrizio Lombardi

International Test Conference Professor, Electrical and Computer Engineering; University of London (United Kingdom), PhD

Marissa Lombardi

Assistant Teaching Professor, College of Professional Studies; Northeastern University, EdD

Guido Lopez

Associate Teaching Professor, College of Professional Studies;
Northeastern University, PhD

Steven A. Lopez

Assistant Professor, Chemistry and Chemical Biology; University of
California, Los Angeles, PhD

Connie Lorette

Assistant Clinical Professor, Nursing; Boston College, PhD

Ralph H. Loring

Associate Professor, Pharmaceutical Sciences; Cornell University, PhD

Ivan Loseu

Professor, Mathematics; Moscow State University (Russia), PhD

Daniel Lothian

Visiting Scholar, Journalism; American University, MA

Kathleen E. Lotterhos

Assistant Professor, Marine and Environmental Sciences; Florida State
University, PhD

Salim A. Lotuff III

Teaching Professor, Communication Studies; Northeastern University, MA

Deirdre Loughridge

Assistant Professor, Music; University of Pennsylvania, PhD

Jennifer O. Love

Associate Academic Specialist, Engineering; University of Iowa, MS

Timothy Love

Associate Professor, Architecture; Harvard University, MArch

William Lovely

Assistant Academic Specialist, International Business and Strategy;
Northeastern University, DLP

Amy Shirong Lu

Assistant Professor, Communication Studies and Health Sciences;
University of North Carolina, Chapel Hill, PhD

Long Lu

Assistant Professor, Computer and Information Science; Georgia Institute
of Technology, PhD

Mary Ludden

Assistant Teaching Professor, College of Professional Studies; Walden
University, PhD

Razvan Lungeanu

Assistant Professor, Entrepreneurship and Innovation; Northwestern
University, PhD

Katherine Luongo

Associate Professor, History; University of Michigan, Ann Arbor, PhD

Steven Lustig

Associate Professor, Chemical Engineering; Purdue University, PhD

David E. Luzzi

Professor, Mechanical and Industrial Engineering; Northwestern
University, PhD

Vasiliki Lykourinou

Assistant Teaching Professor, Chemistry and Chemical Biology;
University of South Florida, PhD

Jun Ma

Associate Professor, Economics; University of Washington, PhD

Kayse Maass

Assistant Professor, Mechanical and Industrial Engineering; University of
Michigan, PhD

Patricia A. Mabrouk

Professor, Chemistry and Chemical Biology; Massachusetts Institute of
Technology, PhD

Esther MacKenzie

Visiting Clinical Instructor, Nursing; Boston University, MA

Andrew Mackie

Assistant Clinical Professor, Physician Assistant Program; University of
Nebraska, MS

Emanuele Macri

Associate Professor, Mathematics; SISSA (Italy), PhD

Jeanne Madden

Associate Professor, Pharmacy and Health Systems Sciences; Harvard
University, PhD

Kristin Madison

Professor, Health Sciences and Law; Stanford University, PhD

Tracy Magee

Assistant Clinical Professor, Nursing; Boston College, PhD

Bala Maheswaran

Teaching Professor, Engineering; Northeastern University, PhD

Debra Mahfouz

Associate Clinical Professor, Pharmacy and Health Systems Sciences;
University of Rhode Island, PharmD

Elizabeth Mahler

Associate Teaching Professor, College of Professional Studies; George
Washington University, EdD

Luigia Maiellaro

Teaching Professor, World Languages Center; Russian State University
for the Humanities (Russia), PhD

Lee Makowski

Professor, Bioengineering and Chemistry and Chemical Biology;
Massachusetts Institute of Technology, PhD

Purnima Makris

Associate Professor, Electrical and Computer Engineering;
Massachusetts Institute of Technology, PhD

Alexandros Makriyannis

George D. Behrakis Chair and Professor, Center for Drug Discovery and
Chemistry and Chemical Biology; University of Kansas, PhD

Michael Malamas

Research Associate Professor, Center for Drug Discovery and Chemistry
and Chemical Biology; University of Pennsylvania, PhD

Mario Maletta

Professor, Accounting; University of Massachusetts, Amherst, PhD

Shiti Malhotra

Lecturer, Linguistics; University of Maryland, PhD

Veronika Maliborska

Assistant Teaching Professor, College of Professional Studies; Purdue University, PhD

Mikhail B. Malioutov

Professor, Mathematics; Moscow State University (Russia), PhD

Andrew Mall

Assistant Professor, Music; University of Chicago, PhD

Craig E. Maloney

Associate Professor, Mechanical and Industrial Engineering; University of California, Santa Barbara, PhD

Roman Manetsch

Associate Professor, Chemistry and Chemical Biology and Pharmaceutical Sciences; University of Basel (Switzerland), PhD

John Manfredelli

Professor of the Practice, Computer and Information Science; University of California, Berkeley, PhD

Swapnil Maniar

Professor of the Practice, Health Sciences; Johns Hopkins University, PhD

Justin Manjourides

Assistant Professor, Health Sciences; Harvard University, PhD

Emily Mann

Teaching Professor, Human Services; University of Wisconsin, Madison, PhD

James M. Manning

Professor, Biology; Tufts University, PhD

Peter Manning

Elmer V.H. and Eileen M. Brooks Chair in Policing, Criminology and Criminal Justice; Duke University, PhD

Maira Mannix Votel

Associate Cooperative Education Coordinator, Bouvé College of Health Sciences; Columbia University, MA

Peter Manolios

Professor, Computer and Information Science; University of Texas, Austin, PhD

Valentina Marano

Assistant Professor, International Business and Strategy; University of South Carolina, PhD

Janice Maras

Assistant Teaching Professor, Health Sciences; Northeastern University, EdD

Krassimir Marchev

Professor of the Practice, College of Professional Studies; Northeastern University, PhD

Edwin Marengo Fuentes

Associate Professor, Electrical and Computer Engineering; Northeastern University, PhD

Donald G. Margotta

Associate Professor, Finance; University of North Carolina, Chapel Hill, PhD

Alina Marian

Professor, Mathematics; Harvard University, PhD

Tucker Marion

Associate Professor, Entrepreneurship and Innovation; Pennsylvania State University, PhD

Robert S. Markiewicz

Professor, Physics; University of California, Berkeley, PhD

Alycia Markowski

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Northeastern University, DPT

Mindy Marks

Associate Professor, Economics; Washington University, PhD

Stacy Marsella

Professor, Computer and Information Science and Psychology; Rutgers University, PhD

Ineke Marshall

Professor, Sociology and Anthropology and Criminology and Criminal Justice; Bowling Green State University, PhD

Dayna L. Martinez

Assistant Teaching Professor, Mechanical and Industrial Engineering; University of South Florida, Tampa, PhD

Ramiro Martinez

Professor, Criminology and Criminal Justice and Sociology and Anthropology; Ohio State University, PhD

José Angel Martínez-Lorenzo

Assistant Professor, Mechanical and Industrial Engineering and Electrical and Computer Engineering; Universidad de Vigo (Spain), PhD

Alexander Martsinkovsky

Associate Professor, Mathematics; Brandeis University, PhD

David Massey

Professor, Mathematics; Duke University, PhD

Jude E. Mathews

Associate Teaching Professor, Chemistry and Chemical Biology; Clemson University, PhD

Kristen Mathieu Gonzalez

Clinical Instructor, Nursing; University of Phoenix, MS

Daniele Mathras

Assistant Professor, Marketing; Arizona State University, PhD

Thomas M. Matta

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Xavier University of Louisiana, PharmD

Carla Mattos

Professor, Chemistry and Chemical Biology; Massachusetts Institute of Technology, PhD

Lucy Maulsby

Associate Professor, Architecture; Columbia University, PhD

Ernest Mauristhene

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Hardin-Simmons University, MBA

Jessica Maxwell

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Boston University, PhD; Massachusetts General Hospital Institute of Health Professions, DPT

William Mayer

Professor, Political Science; Harvard University, PhD

Mary Mayville

Assistant Clinical Professor, Nursing; Northeastern University, DNP

Dori P. Mazor

Associate Cooperative Education Coordinator, College of Arts, Media and Design; Brandeis University, MBA

Charn McAllister

Assistant Professor, Management and Organizational Development; Florida State University, PhD

Michelle McAllister

Visiting Assistant Professor, Accounting; Florida State University, PhD

Laurie McCadden

Clinical Instructor, Nursing; University of Massachusetts, Lowell, MSN

Paulette McCarty

Assistant Academic Specialist, Management and Organizational Development; University of Tennessee, PhD

Jane McCool

Assistant Clinical Professor, Nursing; University of Rhode Island, PhD

Al McCready

Assistant Teaching Professor, College of Professional Studies; George Washington University, PhD

Eileen McDonagh

Professor, Political Science; Harvard University, PhD

Ann McDonald

Associate Professor, Art + Design; Yale University, MFA

Matthew McDonald

Associate Professor, Music; Yale University, PhD

Brianne McDonough

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Salem State University, MS

Melissa McElligott

Assistant Teaching Professor, Biology; Northeastern University, PhD

Seamus McGovern

Lecturer, Supply Chain and Information Management; Northeastern University, PhD

Nicol E. McGruer

Professor, Electrical and Computer Engineering; Michigan State University, PhD

Jean McGuire

Professor of the Practice, Health Sciences; Brandeis University, PhD

Hugh McManus

Associate Teaching Professor, Mechanical and Industrial Engineering; Stanford University, PhD

Cristine McMartin-Miller

Associate Teaching Professor, College of Professional Studies; Purdue University, PhD

Joseph McNabb

Professor of the Practice, College of Professional Studies; Northeastern University, PhD

Robert C. McOwen

Professor, Mathematics; University of California, Berkeley, PhD

Frances Nelson McSherry

Teaching Professor, Theatre; New York University, MFA

Iraz Mehdi

Assistant Cooperative Education Coordinator, College of Engineering; California State University, Long Beach, MS

Emanuel S. Melachrinoudis

Professor, Mechanical and Industrial Engineering; University of Massachusetts, Amherst, PhD

Waleed Meleis

Associate Professor, Electrical and Computer Engineering; University of Michigan, PhD

Susan L. Mello

Assistant Professor, Communication Studies; University of Pennsylvania, PhD

Tina J. Mello

Assistant Cooperative Education Coordinator, College of Science; Boston College, MA

Richard H. Melloni Jr.

Professor, Psychology; University of Massachusetts, PhD

Tommaso Melodia

Associate Professor, Electrical and Computer Engineering; Georgia Institute of Technology, PhD

Latika Menon

Associate Professor, Physics; Tata Institute of Fundamental Research, Bombay (India), PhD

Francisco Mesch

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Washington State University, MS

Hameed Metghalchi

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, ScD

Laura Meyer

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Cleveland State University, MEd

Marc H. Meyer

Robert J. Shillman Professor of Entrepreneurship and Matthews Distinguished University Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Michael Meyer

Associate Teaching Professor, Philosophy and Religion; Boston University, PhD

Ningfang Mi

Associate Professor, Electrical and Computer Engineering; University of Texas, Dallas, MS

Vidoje Mihajlovikj

Lecturer, Computer and Information Science; Clarkson University, PhD

Lara Milane

Assistant Teaching Professor, Pharmaceutical Sciences; Northeastern University, PhD

Loiza Miles

Assistant Academic Specialist, World Languages Center; Sorbonne University (France), MA

William Miles

Professor, Political Science; Tufts University, PhD

Danielle M. Miller

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Edward Miller

Assistant Teaching Professor, College of Professional Studies; Boston College, PhD

Gregory Miller

Associate Professor, Pharmaceutical Sciences; University of New York, PhD

Heather Miller

Assistant Clinical Professor, Computer and Information Science; Ecole Polytechnique Federale de Lausanne (Switzerland), PhD

Joanne L. Miller

Matthews Distinguished University Professor, Psychology; University of Minnesota, PhD

Matthew Miller

Professor, Health Sciences; Yale University, MD; Harvard University, ScD

Renee Miller

Distinguished Professor, Computer and Information Science; University of Wisconsin, Madison, PhD

Ennio Mingolla

Professor, Communication Sciences and Disorders; University of Connecticut, PhD

Marilyn L. Minus

Associate Professor, Mechanical and Industrial Engineering; Georgia Institute of Technology, PhD

Alan Mislove

Associate Professor, Computer and Information Science; Rice University, PhD

Cheryl Mitteness

Academic Specialist, Entrepreneurship and Innovation; University of Louisville, PhD

Nancy Mizzoni

Clinical Instructor, Nursing; Northeastern University, MS

Anahit Mkrtchyan

Assistant Professor, Finance; Pennsylvania State University, PhD

Sarah Mockler

Assistant Cooperative Education Coordinator, College of Engineering; Boston College, MA

Alicia Modestino

Associate Professor, Public Policy and Urban Affairs and Economics; Harvard University, PhD

Valentine Moghadam

Professor, International Affairs; American University, PhD

Mohsen Moghaddam

Assistant Professor, Mechanical and Industrial Engineering; Purdue University, PhD

Shan Mohammed

Associate Clinical Professor, Health Sciences; Case Western Reserve University, MD

Changiz Mohiyeddini

Associate Professor, Applied Psychology; University of Trier (Germany), PsyD

Beth Molnar

Associate Professor, Health Sciences; Harvard University, ScD

James Monaghan

Assistant Professor, Biology; University of Kentucky, PhD

Yasmil Montes

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Cambridge College, MS

Susan F. Montgomery

Senior Academic Specialist, Entrepreneurship and Innovation and Law; Northeastern University, JD

Robert M. Mooradian

Professor and Harding Research Professor, Finance; University of Pennsylvania, PhD

Rebekah Moore

Visiting Assistant Professor, Music; Indiana University, PhD

Enrique F. Moreno

Senior Lecturer, Physics; Universidad Nacional de La Plata (Argentina), PhD

Kimberly Moreno

Professor, Accounting; University of Massachusetts, Amherst, PhD

Joanne Morreale

Associate Professor, Media and Screen Studies; Temple University, PhD

Mounira Morris

Assistant Teaching Professor, College of Professional Studies; University of Massachusetts, Amherst, EdD

Kristen Morse

Assistant Cooperative Education Coordinator, Bouvé College of Health Sciences; Ithaca College, DPT

Hossein Mosallaei

Professor, Electrical and Computer Engineering; University of California, Los Angeles, PhD

Edward Moss

Associate Teaching Professor, Writing Program; Emerson College, MFA

Lorraine Ann Mountain

Senior Cooperative Education Coordinator, College of Engineering; Tufts University, MS

Amy Mueller

Assistant Professor, Civil and Environmental Engineering and Marine and Environmental Sciences; Massachusetts Institute of Technology, PhD

Sinan Muftu

Professor, Mechanical and Industrial Engineering; University of Rochester, PhD

Tania Muino

Assistant Academic Specialist, World Languages Center; University of Barcelona (Spain), MA

Sanjeev Mukerjee

Professor, Chemistry and Chemical Biology; Texas AM University, PhD

Jay Mulki

Associate Professor, Marketing; University of South Florida, PhD

Anthony Mullen

Associate Teaching Professor, Computer and Information Science; University of Groningen (Netherlands), PhD

Patrick Mullen

Associate Professor, English; University of Pittsburgh, PhD

Seth Mulliken

Assistant Teaching Professor, Media and Screen Studies; North Carolina State University, PhD

Samuel E. Munoz

Assistant Professor, Marine and Environmental Sciences and Civil and Environmental Engineering; University of Wisconsin, Madison, PhD

Kellianne Murphy

Senior Cooperative Education Coordinator, College of Arts, Media and Design; Northeastern University, MA

Lauren A. Murphy

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Portland State University, PhD

Robert Murray

Assistant Academic Specialist, Supply Chain and Information Management; Harvard Business School, MBA

Shashi K. Murthy

Professor, Chemical Engineering; Massachusetts Institute of Technology, PhD

Hande Musdal Ondemir

Assistant Teaching Professor, Mechanical and Industrial Engineering; Northeastern University, PhD

Cecelia Musselman

Associate Teaching Professor, Writing Program; Columbia University, PhD

Shakir Mustafa

Teaching Professor, World Languages Center; Boston University, PhD

Andrew Myers

Associate Professor, Civil and Environmental Engineering; Stanford University, PhD

David Myers

Associate Teaching Professor, Finance; University of Washington, PhD

Laura Mylott

Clinical Professor, Nursing; Boston College, PhD

Nada Naji

Lecturer, Computer and Information Science; University of Neuchatel (Switzerland), PhD

Thomas K. Nakayama

Professor, Communication Studies; University of Iowa, PhD

Laurie Nardone

Associate Teaching Professor, English; Emory University, PhD

Pran Nath

Matthews Distinguished University Professor, Physics; Stanford University, PhD

Hamid Nayeb-Hashemi

Professor, Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Collette Ncube

Assistant Professor, Health Sciences; University of Pittsburgh, PhD

Brent Nelson

Associate Professor, Physics; University of California, Berkeley, PhD

Carl W. Nelson

Associate Professor, International Business and Strategy; University of Manchester (United Kingdom), PhD

Laura Nelson

Assistant Professor, Sociology and Anthropology; University of California, Berkeley, PhD

Huy Nguyen

Assistant Professor, Computer and Information Science; Princeton University, PhD

Julie Nguyen

Assistant Cooperative Education Coordinator, College of Engineering; Columbia University, MA

Jennifer Nichol

Assistant Professor, Accounting; University of Illinois, Urbana-Champaign, PhD

Sandy Nickel

Assistant Teaching Professor, College of Professional Studies; University of Iowa, PhD

Mark J. Niedre

Associate Professor, Bioengineering; University of Toronto (Canada), PhD

Spyridon Nikas

Research Associate Professor, Center for Drug Discovery; Aristotle University (Greece), PhD

Jelena Nikolic

Assistant Teaching Professor, Economics; Nottingham University (United Kingdom), PhD

Matthew Nippins

Assistant Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Matthew C Nisbet

Professor, Communication Studies; Cornell University, PhD

Cristina Nita-Rotaru

Professor, Computer and Information Science; Johns Hopkins University, PhD

Daniel Noemi Voionmaa

Associate Professor, Cultures, Societies, and Global Studies; Yale University, PhD

Alison Nogueira

Associate Cooperative Education Coordinator, College of Engineering; Suffolk University, MEd

David Nolan

Associate Clinical Professor, Physical Therapy, Movement, and Rehabilitation Sciences; Massachusetts General Hospital Institute of Health Professions, DPT

Kimberly Nolan

Assistant Teaching Professor, College of Professional Studies; University of Vermont, EdD

Carey Noland

Associate Professor, Communication Studies; Ohio University, PhD

Ellen Noonan

Associate Teaching Professor, Writing Program; Emerson College, MFA

Matthew Noonan

Associate Teaching Professor, Writing Program; Massachusetts College of Art, MFA

Guevara Noubir

Professor, Computer and Information Science; Swiss Federal Institute of Technology, Lausanne (Switzerland), PhD

Gilbert Nyaga

Associate Professor and Joe Dichiacchio Faculty Fellow, Supply Chain and Information Management; Michigan State University, PhD

Daniel O'Brien

Assistant Professor, Public Policy and Urban Affairs and Criminology and Criminal Justice; Binghamton University, PhD

Brian O'Connell

Assistant Teaching Professor, Engineering; Tufts University, PhD

Donica O'Malley

Postdoctoral Teaching Associate, Communication Studies; University of Pittsburgh, PhD

Jessica Oakes

Assistant Professor, Bioengineering; University of California, San Diego, PhD

Antonio Ocampo-Guzman

Associate Professor, Theatre; York University (Canada), MFA

Curtis Odum

Visiting Lecturer, Management and Organizational Development; Pepperdine University, EdD

Dietmar Offenhuber

Assistant Professor, Art + Design and Public Policy and Urban Affairs; Massachusetts Institute of Technology, PhD

Marvin Onabajo

Assistant Professor, Electrical and Computer Engineering; Texas AM University, PhD

Kay Onan

Associate Professor, Chemistry and Chemical Biology; Duke University, PhD

Mary Jo Ondrechen

Professor, Chemistry and Chemical Biology; Northwestern University, PhD

Annalisa Onnis-Hayden

Associate Teaching Professor, Civil and Environmental Engineering; University of Cagliari (Italy), PhD

Alina Oprea

Associate Professor, Computer and Information Science; Carnegie Mellon University, PhD

Toyoko J. Orimoto

Assistant Professor, Physics; University of California, Berkeley, PhD

Jessica Ormsby

Assistant Cooperative Education Coordinator, College of Engineering; University of Massachusetts, Boston, MEd

Andrew Orr-Skirvin

Associate Clinical Professor, Pharmacy and Health Systems Sciences; University of Texas, Austin, PharmD

Elika Ortega Guzman

Assistant Professor, Cultures, Societies, and Global Studies; University of Western Ontario (Canada), PhD

Sarah Ostadabbas

Assistant Professor, Electrical and Computer Engineering; University of Texas, Dallas, PhD

Timothy Ouillette

Assistant Teaching Professor, Communication Studies; Art Institute of Boston, MFA

Jane Owens

Associate Professor, Pharmacy and Health Systems Sciences; Pennsylvania State University, PhD

Oyindasola O. Oyelaran

Associate Teaching Professor, Chemistry and Chemical Biology; Harvard University, PhD

Yusuf Ozbek

Associate Teaching Professor, Graduate School of Engineering; Northeastern University, PhD

Sean O'Connell

Assistant Academic Specialist, College of Professional Studies; University of Massachusetts, MA

Catherine O'Connor

Clinical Instructor, Nursing; Boston College, MS

George A. O'Doherty

Professor, Chemistry and Chemical Biology; Ohio State University, PhD

Russ O'Haver

Senior Academic Specialist, Accounting; University of New York, PhD

Peggy L. O'Kelly

Principal Lecturer, Accounting; University of Michigan, MBA

Donald M. O'Malley

Associate Professor, Biology; Harvard University, PhD

Therese M. O'Neil-Pirozzi

Associate Professor, Communication Sciences and Disorders; Boston University, ScD

Taskin Padir

Associate Professor, Electrical and Computer Engineering; Purdue University, PhD

Robert K. Painter

Senior Lecturer, Linguistics; State University of New York, Buffalo, PhD

Himlona Palikhe

Assistant Teaching Professor, Graduate School of Engineering; Texas Tech University, PhD

Costas Panagopoulos

Professor, Political Science; New York University, PhD

Kwamina Panford

Associate Professor, Cultures, Societies, and Global Studies; Northeastern University, PhD

Coleen C. Pantalone

Associate Professor, Finance; Iowa State University, PhD

Themis Papageorge

Associate Clinical Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Harikrishnan Parameswaran

Assistant Professor, Bioengineering; Boston University, PhD

Serena Parekh McGushin

Associate Professor, Philosophy and Religion; Boston College, PhD

Jason Parente

Assistant Clinical Professor, Physician Assistant Program; Northeastern University, MS

Melissa Parenti

Assistant Teaching Professor, College of Professional Studies; University of Southern California, EdD

Andrea Parker

Assistant Professor, Computer and Information Science and Health Sciences; Georgia Institute of Technology, PhD

Christopher Parsons

Assistant Professor, History; University of Toronto (Canada), PhD

Nikos Passas

Professor, Criminology and Criminal Justice; University of Edinburgh (Scotland), PhD

Rupal Patel

Professor, Communication Sciences and Disorders and Computer and Information Science; University of Toronto (Canada), PhD

Dipu Patel-Junankar

Assistant Clinical Professor, Physician Assistant Program; University of Nebraska, MPAS

Bryan Patterson

Assistant Teaching Professor, College of Professional Studies; University of Florida, PhD

Mark R. Patterson

Professor, Marine and Environmental Sciences and Civil and Environmental Engineering; Harvard University, PhD

Koen Pauwels

Distinguished Professor, Marketing; University of California, Los Angeles, PhD

Michael Pavel

Professor of the Practice, Computer and Information Science and Health Sciences; New York University, PhD

Spiro Pavlopoulos

Research Associate Professor, Center for Drug Discovery; Victorian College of Pharmacy, Melbourne (Australia), PhD

Virgiliu Pavlu

Associate Teaching Professor, Computer and Information Science; Northeastern University, PhD

Nancy Pawlyshyn

Associate Teaching Professor, College of Professional Studies; Capella University, PhD

Celia Pearce

Associate Professor, Game Design; University of the Arts London (United Kingdom), PhD

Neal J. Pearlmutter

Associate Professor, Psychology; Massachusetts Institute of Technology, PhD

Melissa Pearson

Assistant Teaching Professor, Writing Program; University of South Carolina, PhD

Christoffer Pedersen

Assistant Professor, Art + Design; University of Copenhagen (Denmark), PhD

Melissa Peiken

Associate Cooperative Education Coordinator, College of Computer and Information Science; Emerson College, MEd

Russell Pensyl

Professor, Art + Design; Western Michigan University, MFA

Diane Perez

Assistant Academic Specialist, College of Professional Studies; Salem State University, MEd

Ivan Petkov

Assistant Professor, Economics; Boston College, PhD

Courtney Pfluger

Assistant Teaching Professor, Chemical Engineering; Northeastern University, PhD

Pegaret Pichler

Assistant Professor, Finance; Stanford University, PhD

Susan E. Picillo

Senior Lecturer, Communication Studies; Cambridge College, MEd

Pamela Pietrucci

Visiting Lecturer, Communication Studies; University of Washington, PhD

Jessica Pike

Assistant Cooperative Education Coordinator, College of Engineering; Bridgewater State University, MEd

Sara Pintado-Lopez

Associate Professor, Health Sciences; University Carlos III of Madrid (Spain), PhD

Ameet Pinto

Assistant Professor, Civil and Environmental Engineering; Virginia Polytechnic Institute and State University, PhD

Maricla Pirozzi

Assistant Cooperative Education Coordinator, Graduate School of Engineering; European School of Economics (Italy), MBA

Leigh Plant

Research Associate Professor, Pharmaceutical Sciences; University of Leeds (United Kingdom), PhD

Harlan D. Platt

Professor, Finance; University of Michigan, PhD

Marjorie Platt

Professor, Accounting; University of Michigan, PhD

Robert Platt Jr.

Assistant Professor, Computer and Information Science; University of Massachusetts, Amherst, PhD

Mya Poe

Associate Professor, English; University of Massachusetts, Amherst, PhD

Hermine Poghosyan

Assistant Professor, Nursing; University of Massachusetts Boston, PhD

Ann Polcari

Associate Clinical Professor, Nursing; Boston College, PhD

Stephanie Pollack

Professor of the Practice, Public Policy and Urban Affairs; Harvard Law School, JD

Michael P. Pollastri

Professor, Chemistry and Chemical Biology; Brown University, PhD

Marius Popescu

Visiting Assistant Professor, Finance; Virginia Polytechnic Institute and State University, PhD

Hilary Poriss

Associate Professor, Music; University of Chicago, PhD

Gary Porter

Assistant Teaching Professor, Finance; University of South Carolina, PhD

Gerald Porter

Visiting Lecturer, Economics; Babson College, MBA

Richard D. Porter

Professor, Mathematics; Yale University, PhD

Veronica L. Porter

Associate Professor, Cooperative Education, College of Science; Northeastern University, MEd

John Portz

Professor, Political Science; University of Wisconsin, Madison, PhD

Mary-Susan Potts-Santone

Teaching Professor, Biology; University of New Hampshire, PhD

Karen Pounds

Assistant Clinical Professor, Nursing; University of Rhode Island, PhD

Michael J. Power

Lecturer, Supply Chain and Information Management; Northeastern University, MBA

Edward Powers

Assistant Teaching Professor, College of Professional Studies; Northeastern University, PhD

Susan G. Powers-Lee

Professor, Biology; University of California, Berkeley, PhD

Silvia Prina

Associate Professor, Economics; Boston University, PhD

Robert Prior

Associate Teaching Professor, College of Professional Studies; Nova Southeastern University, EdD

Robert Pritchard

Associate Teaching Professor, Economics; Northeastern University, PhD

Mark Prokosch

Senior Lecturer, Psychology; University of California, Davis, PhD

Sheila M. Puffer

Professor and University Distinguished Professor, International Business and Strategy; University of California, Berkeley, PhD

Karen Quigley

Research Associate Professor, Psychology; Ohio State University, PhD

Gordana Rabrenovic

Associate Professor, Sociology and Anthropology; State University of New York, Albany, PhD

John Rachlin

Assistant Teaching Professor, Computer and Information Science; Boston University, PhD

Joseph A. Raelin

Professor and Asa S. Knowles Chair of Practice-Oriented Education, Management and Organizational Development; State University of New York, Buffalo, PhD

Sriramasundarar Rajagopalan

Assistant Teaching Professor, College of Professional Studies; Capella University, PhD

Rajmohan Rajaraman

Professor, Computer and Information Science; University of Texas, Austin, PhD

Ravi Ramamurti

University Distinguished Chair Professor, International Business and Strategy; Harvard University, DBA

Valeria Ramdin

Assistant Clinical Professor, Nursing; Northeastern University, DNSc

Alireza Ramezani

Assistant Professor, Electrical and Computer Engineering; University of Michigan, PhD

Janet Randall

Professor, English; University of Massachusetts, Amherst, PhD

Aanjhan Ranganathan

Assistant Professor, Computer and Information Science; ETH Zurich (Switzerland), PhD

Carey M. Rappaport

College of Engineering Distinguished Professor, Electrical and Computer Engineering; Massachusetts Institute of Technology, ScD

Andrea Raynor

Teaching Professor, Art + Design; School of Visual Arts, MFA

Desislava Raytcheva

Lecturer, Biology; Northeastern University, PhD

Leena Razzaq

Assistant Teaching Professor, Computer and Information Science; Worcester Polytechnic Institute, PhD

Joseph Reagle

Associate Professor, Communication Studies; New York University, PhD

Debra J. Reid

Associate Clinical Professor, Pharmacy and Health Systems Sciences; Northeastern University, PharmD

Imke Reimers

Assistant Professor, Economics; University of Minnesota, PhD

Karen Reiss Medwed

Associate Teaching Professor, College of Professional Studies; New York University, PhD

Marketa Rejtar

Assistant Clinical Professor, Nursing; Massachusetts General Hospital Institute of Health Professions, PhD

John R. Reynolds

Professor, Pharmacy and Health Systems Sciences; Duquesne University, PharmD

Karl Reynolds

Associate Teaching Professor, College of Professional Studies; University of Washington, PhD

Mahtab Rezvani

Assistant Academic Specialist, College of Professional Studies; California State University, Los Angeles, MA

Christopher Richardson

Lecturer, Biology; Boston University, PhD

Milda Richardson

Lecturer, Art + Design; Boston University, PhD

Megan Richmond

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston College, MEd

Janet S. Rico

Associate Clinical Professor, Nursing; Northeastern University, PhD

Mirek Riedewald

Associate Professor, Computer and Information Science; University of California, Santa Barbara, PhD

Christoph Riedl

Assistant Professor, Supply Chain and Information Management and Computer and Information Science; Technische Universität München (Germany), PhD

Justin B. Ries

Associate Professor, Marine and Environmental Sciences; Johns Hopkins University, PhD

Matteo Rinaldi

Associate Professor, Electrical and Computer Engineering; University of Pennsylvania, PhD

Christie Rizzo

Assistant Professor, Applied Psychology; University of Southern California, Los Angeles, PhD

Christina Roberts

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Simmons College, MBA

Susan J. Roberts

Professor, Nursing; Boston University, DNSc

Christopher J. Robertson

Professor, International Business and Strategy; Florida State University, PhD

Craig M. Robertson

Associate Professor, Media and Screen Studies; University of Illinois, Urbana-Champaign, PhD

William Robertson

Associate Professor, Computer and Information Science and Electrical and Computer Engineering; University of California, Santa Barbara, PhD

Cordula Robinson

Associate Teaching Professor, College of Professional Studies; University College London (United Kingdom), PhD

Hillary Robinson

Associate Professor, Law and Sociology and Anthropology; Massachusetts Institute of Technology, PhD; Harvard University, JD

Holbrook Robinson

Associate Professor, Cultures, Societies, and Global Studies; University of California, Berkeley, PhD

Tracy L. Robinson Wood

Professor, Applied Psychology; Harvard University, EdD

Brian Robison

Assistant Teaching Professor, Music; Cornell University, DMA

David Rochefort

Distinguished Professor, Political Science; Brown University, PhD

Rachel Rodgers

Associate Professor, Applied Psychology; Université de Toulouse-Le Mirail (France), PhD

Kirsten Rodine Hardy

Associate Professor, Political Science; University of California, Berkeley, PhD

Bruce Ronkin

Professor, Music; University of Maryland, DMA

Tayla Rose

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of Connecticut, PharmD

Rebeca B. Rosengaus

Associate Professor, Marine and Environmental Sciences; Boston University, PhD

James R. Ross

Associate Professor, Journalism; American University, MA

Alexandra Roth

Associate Academic Specialist, International Business and Strategy; University of Frankfurt (Germany), PhD

Sara Rouhanifard

Assistant Professor, Bioengineering; Yeshiva University, PhD

Deya Roy

Postdoctoral Teaching Associate, Communication Studies; State University of New York, Amherst, MA

Jeffrey W. Ruberti

Professor, Bioengineering; Tulane University, PhD

Michael Ruff

Assistant Teaching Professor, Accounting; Bentley University, PhD

Timothy J. Rupert

Professor, Accounting; Pennsylvania State University, PhD

Ivan Rupnik

Associate Professor, Architecture; Harvard University, MArch

Bruce Russell

Associate Academic Specialist, Supply Chain and Information Management; National University of Ireland (Ireland), PhD

J. Timothy Sage

Associate Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Vinod Sahney

University Distinguished Professor, Mechanical and Industrial Engineering; University of Wisconsin, Madison, PhD

Yuki Sakurai

Visiting Lecturer, World Languages Center; Ohio State University, MA

Masoud Salehi

Associate Professor, Electrical and Computer Engineering; Stanford University, PhD

Carmel Salhi

Assistant Professor, Health Sciences; Harvard University, PhD

William Sanchez

Associate Professor, Applied Psychology; Boston University, PhD

Nada Sanders

Distinguished Professor of Supply Chain Management, Supply Chain and Information Management; Ohio State University, PhD

Tova Sanders

Associate Teaching Professor, College of Professional Studies; George Washington University, EdD

Ronald Sandler

Professor, Philosophy and Religion; University of Wisconsin, Madison, PhD

Billye Sankofa Waters

Associate Teaching Professor, College of Professional Studies; University of North Carolina, PhD

Ravi Sarathy

Professor, International Business and Strategy; University of Michigan, PhD

Linda Sarkisian

Assistant Cooperative Education Coordinator, D'Amore-McKim School of Business; Lynn University, MBA

Mehrdad Sasani

Associate Professor, Civil and Environmental Engineering; University of California, Berkeley, PhD

Ajay B. Satpute

Assistant Professor, Psychology; University of California, Los Angeles, PhD

Behrooz (Barry) Satvat

Associate Teaching Professor, Chemical Engineering; Massachusetts Institute of Technology, ScD

Daniel Saulnier

Associate Cooperative Education Coordinator, College of Engineering; Babson College, MBA

Kevin Scanlon

Professor of the Practice, Entrepreneurship and Innovation; University of London (United Kingdom), PhD

Samuel V. Scarpino

Assistant Professor, Marine and Environmental Sciences and Physics; University of Texas, Austin, PhD

Carmen Sceppa

Professor, Health Sciences; Francisco Marroquin University (Guatemala), MD; Tufts University, PhD

Martin Schedlbauer

Associate Clinical Professor, Computer and Information Science; University of Massachusetts, PhD

Gunar Schirner

Associate Professor, Electrical and Computer Engineering; University of California, Irvine, PhD

Ralf W. Schlosser

Professor, Communication Sciences and Disorders; Purdue University, PhD

Benjamin Schmidt

Assistant Professor, History; Princeton University, PhD

Walter Schnyder

Associate Teaching Professor, Computer and Information Science; Swiss Federal Institute of Technology (Switzerland), PhD

Egon Schulte

Professor, Mathematics; University of Dortmund (Germany), PhD

Kathryn Schulte Grahame

Associate Teaching Professor, Engineering; Columbia University, PhD

Joseph Schwartz

Associate Teaching Professor, Communication Studies; University of Iowa, PhD

Michael Schwartz

Assistant Cooperative Education Coordinator, Graduate School of Engineering; Northeastern University, MS

Martin Schwarz Jr.

Associate Professor, Mathematics; Courant Institute, PhD

Cody Scott

Assistant Professor, Computer and Information Science; University of Maryland, PhD

Douglass Scott

Senior Lecturer, Art + Design; Yale University, MFA

Frank (Alex) Scott

Assistant Professor, Supply Chain and Information Management; Pennsylvania State University, PhD

Steven Scyphers

Assistant Professor, Marine and Environmental Sciences; University of South Alabama, PhD

Darcey Searles

Postdoctoral Teaching Associate, Communication Studies; Rutgers University, PhD

Max Sederer

Assistant Cooperative Education Coordinator, College of Engineering; Tufts University, MEd

Magy Seif El-Nasr

Associate Professor, Computer and Information Science and Art + Design; Northeastern University, PhD

Ethan Selinger

Assistant Cooperative Education Coordinator, College of Computer and Information Science; University of Massachusetts, Lowell, MS

Laura Senier

Assistant Professor, Sociology and Anthropology and Health Sciences; Brown University, PhD

Sumi Seo

Lecturer, Mathematics; University of Missouri, Columbia, PhD

Susan Setta

Associate Professor, Philosophy and Religion; Pennsylvania State University, PhD

Bahram Shafai

Professor, Electrical and Computer Engineering; George Washington University, ScD

Michael Shah

Lecturer, Computer and Information Science; Tufts University, PhD

Rebecca M. Shansky

Assistant Professor, Psychology; Yale University, PhD

Harvey Shapiro

Associate Clinical Professor, College of Professional Studies; Hebrew Union College, PhD

William T. Sharp

Assistant Teaching Professor, Psychology; Boston Graduate School of Psychoanalysis, PhD

Gavin M. Shatkin

Associate Professor, Public Policy and Urban Affairs and Architecture; Rutgers University, PhD

Dennis R. Shaughnessy

Senior Academic Specialist, Entrepreneurship and Innovation; University of Maryland, JD

Margaret Shea

Associate Cooperative Education Coordinator, D'Amore-McKim School of Business; Boston University, BLS

Thomas C. Sheahan

Professor, Civil and Environmental Engineering; Massachusetts Institute of Technology, ScD

Sandra Shefelbine

Associate Professor, Mechanical and Industrial Engineering and Bioengineering; Stanford University, PhD

Abhi Shelat

Associate Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Paxton Sheldahl

Assistant Teaching Professor, Architecture; Harvard University, MArch

Eliot Sherman

Senior Lecturer, Finance; Bentley College, MST

H. David Sherman

Professor, Accounting; Harvard University, DBA

Amit Shesh

Associate Teaching Professor, Computer and Information Science; University of Minnesota, Twin Cities, PhD

Shiaoming Shi

Assistant Teaching Professor, Bioengineering; University of Pittsburgh, PhD

Craig Shillaber

Assistant Teaching Professor, Civil and Environmental Engineering; Virginia Polytechnic Institute and State University, MS

Jennifer Shire

Assistant Cooperative Education Coordinator, College of Computer and Information Science; Columbia University, MBA

Olin Shivers

Professor, Computer and Information Science; Carnegie Mellon University, PhD

Mariya Shiyko

Associate Professor, Applied Psychology; City University of New York, PhD

Katy Shorey

Assistant Teaching Professor, Philosophy and Religion; University of Missouri, PhD

Aatmesh Shrivastava

Assistant Professor, Electrical and Computer Engineering; University of Virginia, Charlottesville, PhD

Stephanie Sibicky

Assistant Clinical Professor, Pharmacy and Health Systems Sciences; University of Rhode Island, PhD

Brandon Sichling

Assistant Teaching Professor, Art + Design; Emerson College, MFA

Jose Sierra

Associate Teaching Professor, Computer and Information Science; Universidad Carlos III de Madrid (Spain), PhD

Robert Sikes

Associate Professor, Physical Therapy, Movement, and Rehabilitation Sciences; University of Texas, Houston, PhD

Michael B. Silevitch

Robert Black Professor of Engineering and College of Engineering Distinguished Professor, Electrical and Computer Engineering; Northeastern University, PhD

Peter Simon

Teaching Professor, Economics; Northern Illinois University, PhD

Simon Singer

Professor, Criminology and Criminal Justice; University of Pennsylvania, PhD

Hanumant Singh

Professor, Electrical and Computer Engineering and Mechanical and Industrial Engineering; Massachusetts Institute of Technology, PhD

Rifat Sipahi

Associate Professor, Mechanical and Industrial Engineering; University of Connecticut, PhD

Michail V. Sitkovsky

Eleanor W. Black Chair in Immunophysiology and Pharmaceutical Biotechnology and Professor, Institute for Tissue Damage and Biology; Moscow State University (Russia), PhD

Mark Sivak

Associate Teaching Professor, Art + Design and Engineering; Northeastern University, PhD

Adrienne Slaughter

Lecturer, Computer and Information Science; University of Washington, PhD

Nikolai Slavov

Assistant Professor, Bioengineering; Princeton University, PhD

Rory Smead

Ronald L. and Linda A. Rossetti Professor for the Humanities, Philosophy and Religion; University of California, Irvine, PhD

David A. Smith

Assistant Professor, Computer and Information Science; Johns Hopkins University, PhD

Keith Smith

Assistant Professor, Marketing; University of Georgia, PhD

Matthew Smith

Associate Professor, Philosophy and Religion; University of North Carolina, Chapel Hill, PhD

Ronald Bruce Smith

Associate Professor, Music; University of California, Berkeley, PhD

Wendy A. Smith

College of Arts and Sciences Distinguished Associate Professor, Biology; Duke University, PhD

Eugene S. Smotkin

Professor, Chemistry and Chemical Biology; University of Texas, Austin, PhD

Bridget Smyser

Associate Teaching Professor, Mechanical and Industrial Engineering; Worcester Polytechnic Institute, PhD

Nancy P. Snyder

Associate Teaching Professor, Psychology; Harvard University, EdD

Dani Snyder-Young

Assistant Professor, Theatre; New State University, PhD

Pablo Soberon Bravo

Zelevinsky Research Professor, Mathematics; University College London (United Kingdom), PhD

Claudia Sokol

Associate Teaching Professor, World Languages Center; University of Buenos Aires (Argentina), MD

Eduardo Sontag

University Distinguished Professor, Electrical and Computer Engineering and Bioengineering; University of Florida, PhD

Maria Sorenson

Visiting Clinical Instructor, Nursing; Northeastern University, MSN

Susan Soroka

Assistant Teaching Professor, Writing Program; Drew University, PhD

Nikolaos S. Soukos

Assistant Teaching Professor, Physics and Biology; University of Munich (Germany), PhD

Bert A. Spector

Associate Professor, International Business and Strategy; University of Missouri, PhD

Denise Spencer

Senior Lecturer, Supply Chain and Information Management; Boston College, PhD

Karen M. Spikes

Lecturer, Psychology; Cornell University, PhD

David Sprague

Lecturer, Computer and Information Science; University of Victoria (Canada), PhD

Bryan Q. Spring

Assistant Professor, Physics; University of Illinois, Urbana-Champaign, PhD

Shelia Springer

Postdoctoral Teaching Associate, Communication Studies; University of Arizona, Tucson, MA

Srinivas Sridhar

College of Arts and Sciences Distinguished Professor, Physics; California Institute of Technology, PhD

Kandarp Srinivasan

Assistant Professor, Finance; Washington University, St. Louis, PhD

Thomas Starr

Professor, Art + Design; Yale University, MFA

Mary Steffel

Assistant Professor, Marketing; Princeton University, PhD; University of Florida, PhD

Karen Stein

Visiting Assistant Professor, Art + Design; Virginia Commonwealth University, MFA

Leslie Stein

Assistant Teaching Professor, College of Professional Studies; United States International University, EdD

Armen B. Stepanyants

Associate Professor, Physics; University of Rhode Island, PhD

Jennie Stephens

Professor, Public Policy and Urban Affairs; California Institute of Technology, PhD

Dagmar Sternad

Professor, Biology and Electrical and Computer Engineering; University of Connecticut, PhD

Sara Stifano

Postdoctoral Teaching Associate, Communication Studies; University of Connecticut, PhD

Sebastian Stockman

Associate Teaching Professor, Writing Program; Emerson College, MFA

Milica Stojanovic

Professor, Electrical and Computer Engineering; Northeastern University, PhD

Janos Stone

Lecturer, Art + Design; Boston University, MFA

Michael Stone

Assistant Teaching Professor, Economics; University of Connecticut, PhD

Jacob Stowell

Associate Professor, Criminology and Criminal Justice; State University of New York, Albany, PhD

Tracy Strain

Professor of the Practice, Media and Screen Studies; Harvard University, MEd

Amy Stratman

Assistant Academic Specialist, College of Professional Studies; Simmons College, MA

Phyllis R. Strauss

Matthews Distinguished University Professor, Biology; Rockefeller University, PhD

Heather Streets-Salter

Professor, History; Duke University, PhD

Aron P. Stubbins

Associate Professor, Marine and Environmental Sciences and Civil and Environmental Engineering and Chemistry and Chemical Biology; Newcastle University (United Kingdom), PhD

Ming Su

Associate Professor, Chemical Engineering; Northwestern University, PhD

Fernando Suarez

Jean C. Tempel Professor, Entrepreneurship and Innovation; Massachusetts Institute of Technology, PhD

Alexandru I. Suci

Professor, Mathematics; Columbia University, PhD

Annemarie C. Sullivan

Clinical Instructor, Health Sciences; Northeastern University, MS

Denis Sullivan

Professor, Political Science and International Affairs; University of Michigan, PhD

Fareena Sultan

Professor, Marketing; Columbia University, PhD

Hao Sun

Assistant Professor, Civil and Environmental Engineering; Columbia University, PhD

Linlin Sun

Assistant Research Professor, Chemical Engineering; Northeastern University, PhD

Nian-Xiang Sun

Professor, Electrical and Computer Engineering; Stanford University, PhD

Ravi Sundaram

Professor, Computer and Information Science; Massachusetts Institute of Technology, PhD

Gloria Sutton

Associate Professor, Art + Design; University of California, Los Angeles, PhD

John D. Swain

Associate Professor, Physics; University of Toronto (Canada), PhD

Richard S. Swasey Jr.

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Northeastern University has maintained its status as a member in good standing of the New England Association of Schools and Colleges (NEASC) Commission on Institutions of Higher Education (CIHE) since it was awarded its initial accreditation in 1940. The university was last reviewed by NEASC in 2008 and will be reviewed again in fall 2018.

Northeastern University possesses degree-granting authority in Massachusetts, under the auspices of the Massachusetts Board of Higher Education.

Program	Accrediting Agency
Northeastern University	New England Association of Schools and Colleges (NEASC)

BOUVÉ COLLEGE OF HEALTH SCIENCES

Program	Accrediting Agency
BS in Athletic Training	Commission on Accreditation of Athletic Training Education (CAATE)
BS in Health Science	Council on Education for Public Health
MS in Speech-Language Pathology and Audiology	Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), Massachusetts Board of Education ¹
BS in Nursing	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
MS in Physician Assistant Studies	Accreditation Review Commission on Education for the Physician Assistant, Inc. (ARC-PA)
MS in Nursing	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
MS in Nursing in Anesthesia	Council on Accreditation of Nurse Anesthesia Educational Programs (COA); Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
Registered Nurse/BSN ³	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ²
Post BS Doctor of Nursing Practice US Army Program in Anesthesia Nursing (USAGPAN)	Council on Accreditation of Nurse Anesthesia Educational Programs (COA)
DPT in Physical Therapy	Commission on Accreditation of Physical Therapy Education (CAPTE)
MS/MBA (two-year program)	Commission on Collegiate Nursing Education (CCNE) and Massachusetts Board of Registration in Nursing ² ; Commission on Collegiate Nursing Education (CCNE) and the Association to Advance Collegiate Schools of Business (AACSB International)
MS and CAGS in Applied Educational Psychology— School Psychology	Massachusetts Department of Education (DOE) and National Association of School Psychologists (NASP)

MS in Applied Educational Psychology – School Counseling	Massachusetts Department of Education (DOE)
AuD in Audiology	Council on Academic Accreditation in Audiology and Speech-Language Pathology (CAA) of the American Speech-Language-Hearing Association (ASHA), Massachusetts Board of Education ¹
MPH Master of Public Health in Urban Health	Council on Education for Public Health
PharmD	Accreditation Council for Pharmacy Education (ACPE)
PhD in Counseling and School Psychology	American Psychology Association (APA)

¹ The Massachusetts Board of Education approves (not accredits) programs.

² The Massachusetts Board of Registration in Nursing approves (not accredits) programs.

³ Accredited under the aegis of the “sponsoring” full-time college.

College of Arts, Media and Design

Program	Accrediting Agency
Master of Architecture (Urban Architecture)	National Architectural Accreditation Board (NAAB)

D’Amore-McKim School of Business

Program	Accrediting Agency
BS in Business Administration	AACSB International—The Association to Advance Collegiate Schools of Business
BS and MS in International Business	AACSB International—The Association to Advance Collegiate Schools of Business
MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Finance	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Taxation	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Accounting	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Accounting/MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Finance/MBA	AACSB International—The Association to Advance Collegiate Schools of Business
MS in Technological Entrepreneurship	AACSB International—The Association to Advance Collegiate Schools of Business

College of Computer and Information Science

Program	Accrediting Agency
BS in Computer Science	Computing Accreditation Commission of ABET (Accreditation Board for Engineering and Technology)

College of Engineering

Program	Accrediting Agency
BS in Computer Engineering	Engineering Accreditation Commission of ABET
BS in Chemical Engineering	Engineering Accreditation Commission of ABET
BS in Civil Engineering	Engineering Accreditation Commission of ABET
BS in Electrical Engineering	Engineering Accreditation Commission of ABET
BS in Industrial Engineering	Engineering Accreditation Commission of ABET
BS in Mechanical Engineering	Engineering Accreditation Commission of ABET

College of Professional Studies

Program	Accrediting Agency
AS and Certificate in Paramedic Technology	Massachusetts Department of Public Health, Office of Emergency Medical Services
BS in Finance and Accounting Management ¹	AACSB International—The Association to Advance Collegiate Schools of Business
BS in Management ¹	AACSB International—The Association to Advance Collegiate Schools of Business
BS and AS in Computer Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700
BS and AS in Electrical Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700
BS and AS in Mechanical Engineering Technology	Accredited by the Technology Accreditation Commission of ABET, 111 Market Place Suite 1050 Baltimore, MD 21202-4012 Telephone: 410.347.7700
Education Programs in:	
Teacher of Biology, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Chemistry, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Earth Science, 5–8, 8–12	Massachusetts Department of Elementary and Secondary Education

Teacher of Mathematics, 5–8, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Physics, 8–12	Massachusetts Department of Elementary and Secondary Education
Elementary Education, 1–6	Massachusetts Department of Elementary and Secondary Education
Teacher of English, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Foreign Language: Spanish, 5–12	Massachusetts Department of Elementary and Secondary Education
Teacher of History, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Political Science/Political Philosophy, 8–12	Massachusetts Department of Elementary and Secondary Education
Teacher of Students with Moderate Disabilities Pre-K–8, 5–12	Massachusetts Department of Elementary and Secondary Education
MS in Leadership with Project Management	Project Management Institute's Global-Accreditation-Center
MS in Technology Commercialization	AACSB International—The Association to Advance Collegiate Schools

¹ Accredited under the aegis of the “sponsoring” full-time college.

College of Social Science and Humanities

Program	Accrediting Agency
BS in Criminal Justice	Massachusetts Board of Education ¹
MS in Criminal Justice	Massachusetts Board of Education ¹
PhD in Criminal Justice	Massachusetts Board of Education ¹
Master of Public Administration	National Association of Schools of Public Affairs and Administration

¹ The Massachusetts Board of Education approves (not accredits) programs.

School of Law

Program	Accrediting Agency
JD	American Bar Association Association of American Law Schools ⁴

⁴ The Association of American Law Schools is an elected membership organization, not an accrediting body.

State Approvals, Authorizations, and Exemptions

Some states require that universities authorized to operate in their state make public disclosures. See the corresponding addendum on the Online and Graduate Professional Degree Programs website

(<http://www.northeastern.edu/online/about-northeastern-online/state-agreements.php>) for up-to-date, state-prescribed regulatory information applicable to all degree levels.

Institutional Calendars and Online Resources

The online resources listed below supplement this catalog.

Institutional Calendars

University events:

<http://calendar.northeastern.edu/>

Academic calendars:

www.northeastern.edu/registrar/calendars.html (<http://www.northeastern.edu/registrar/calendars.html>)

Other Online Resources

Course descriptions:

<https://registrar.northeastern.edu/article/catalog-2017-2018/>

Class schedules:

<https://registrar.northeastern.edu/article/schedule-of-classes/>

Campus maps:

www.northeastern.edu/campusmap (<http://www.northeastern.edu/campusmap>)

General Information

The *Northeastern University Graduate Catalog* contains the university's primary statements about these academic programs and degree requirements, as authorized by the president or the Board of Trustees. For information about other academic policies and procedures; student responsibilities; student academic and cocurricular life; faculty rights and responsibilities; or general personnel policies, benefits, and services, please refer to the *Cooperative Education Student Handbook*, *Faculty Handbook*, and related procedural guides, as appropriate.

Accreditation. Northeastern University is accredited by the New England Association of Schools and Colleges, Inc.

Delivery of Services. Northeastern University assumes no liability for delay or failure to provide educational or other services or facilities due to causes beyond its reasonable control. Causes include, without limitation, power failure, fire, strikes by university employees or others, damage by natural elements, and acts of public authorities. The university will, however, exert reasonable efforts, when it judges them to be appropriate, to provide comparable services, facilities, or performance; but its inability or failure to do so shall not subject the university to liability.

The *Northeastern University Graduate Catalog* contains current information about the university calendar, admissions, degree requirements, fees, and regulations; however, such information is not intended and should not be regarded to be contractual.

Northeastern University reserves the sole right to promulgate and change rules and regulations and to make changes of any nature in its program; calendar; admissions policies, procedures, and standards; degree requirements; fees; and academic schedule whenever necessary or desirable, including, without limitation, changes in course content and class schedule, the cancellation of scheduled classes and other academic activities, and the substitution of alternatives for scheduled

classes and other academic activities. In any such case, the university will give whatever notice is reasonably practical.

Northeastern University will endeavor to make available to its students a fine education and a stimulating and congenial environment. However, the quality and rate of progress of an individual's academic career and professional advancement upon completion of a degree or program are largely dependent on his or her own abilities, commitment, and effort. In many professions and occupations, there are also requirements imposed by federal and state statutes and regulatory agencies for certification or entry into a particular field. These requirements may change while a student is enrolled in a program and may vary from state to state or country to country. Although the university stands ready to help its students find out about requirements and changes in them, it is the student's responsibility to initiate the inquiry.

Tuition Default Policy. In cases where the student defaults on his or her tuition, the student shall be liable for the outstanding tuition and all reasonable associated collection costs incurred by the university, including attorneys' fees.

Emergency Closing of the University. Northeastern University posts emergency announcements, including news of weather-related closings, on its homepage (<http://www.northeastern.edu>) and notifies members of the community individually through the NU ALERT system. In addition, the university has made arrangements to notify students, faculty, and staff by radio and television when it becomes necessary to cancel classes because of extremely inclement weather. AM stations WBZ (1030), WILD (1090), and WRKO (680), and FM station WBUR (90.9) are the radio stations authorized to announce the university's decision to close. Television stations WBZ-TV4, WCVB-TV5, and WHDH-TV7 will also report cancellations. Since instructional television courses originate from live or broadcast facilities at the university, neither the classes nor the courier service operates when the university is closed. Please listen to the radio or television to determine whether the university will be closed.

If a storm occurs at night, the announcement of university closing is given to the radio stations at approximately 6 a.m. Classes are generally canceled for that entire day and evening at all campus locations unless stated otherwise. When a storm begins late in the day, cancellations of evening classes may be announced. This announcement is usually made between 2 p.m. and 3 p.m.

Equal Opportunity Policy. Northeastern University does not discriminate on the basis of race, color, religion, sex, sexual orientation, age, national origin, disability, or veteran status in admission to, access to, treatment in, or employment in its programs and activities. In addition, Northeastern University will not condone any form of sexual harassment. Handbooks containing the university's nondiscrimination policies and its grievance procedures are available in the Office of Institutional Diversity and Inclusion, 125 Richards Hall. Inquiries regarding the university's nondiscrimination policies may be directed to:

Office of Institutional Diversity and Inclusion
125 Richards Hall
Northeastern University
Boston, Massachusetts 02115
617.373.2133

Inquiries concerning the application of nondiscrimination policies may also be referred to the Regional Director, Office for Civil Rights, U.S. Department of Education, 8th Floor, 5 Post Office Square, Boston, MA 02109-3921.

Disability Resource Center. The Disability Resource Center provides a variety of disability-related services and accommodations to Northeastern University's students and employees with disabilities.

Northeastern University's compliance with Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act of 1990 are coordinated by the senior director of the Disability Resource Center. Persons requiring information regarding the Disability Resource Center should contact the center at 617.373.2675 or, if using TTY, via Relay 711.

Family Educational Rights and Privacy Act. In accordance with the Family Educational Rights and Privacy Act of 1974, Northeastern University permits its students to inspect their records wherever appropriate and to challenge specific parts of them when they feel it is necessary to do so. Specific details of the law as it applies to Northeastern are printed in the *Undergraduate Student Handbook* and *Graduate Student Handbook* and are distributed annually at registration for the university's colleges and graduate schools.

Clery Act. Northeastern is committed to assisting all members of the university community in providing for their own safety and security. Information regarding campus security and personal safety, including topics such as crime prevention, university police law enforcement authority, crime reporting policies, crime statistics for the most recent three-year period, and disciplinary procedures, is available upon request from the Northeastern University Director of Public Safety, 360 Huntington Avenue, Boston, MA 02115, or by calling 617.373.2696.

Mission Statement:

To educate students for a life of fulfillment and accomplishment.
To create and translate knowledge to meet global and societal needs.

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